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FILE COVERS 1907 - 16 Apr 2008 VOL 148 ISS 16  
 FILE LAST UPDATED: 15 Apr 2008 (20080415/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d 140 bib abs hitstr retable tot

L40 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:612574 HCAPLUS

DN 143:136276

TI Polymer solid electrolytes for batteries

IN Shimada, Mikiya; Niitani, Takeshi

PA Nippon Soda Co., Ltd., Japan

SO PCT Int. Appl., 33 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005064620	A1	20050714	WO 2004-JP19710	20041222 <--
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,				
	CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,				
	GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,				
	LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,				
	NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,				
	TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW:				
	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,				
	AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,				
	EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,				
	RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,				
	MR, NE, SN, TD, TG				
PRAI	JP 2003-430626	A	20031225 <--		
	JP 2004-296309	A	20041008		

AB Disclosed is a polymer solid electrolyte having both excellent ion conductivity and shape stability. A polymer solid electrolyte was characterized by containing a polymer having an ion-conducting region, an additive having at least one chemical bond selected from the group consisting of urethane bond, thiourethane bond, ureide bond, imide bond and amide bond in a mol., and an electrolyte salt.

IT 9081-45-2P, Styrene-methyl polyethylene glycol monomethacrylate  
 copolymer 858181-45-0P, Styrene-2-hydroxyethyl  
 acrylate-polyethylene glycol monomethacrylate methyl ether copolymer  
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP  
 (Preparation); USES (Uses)  
 (polymer solid electrolytes for batteries)

RN 9081-45-2 HCAPLUS

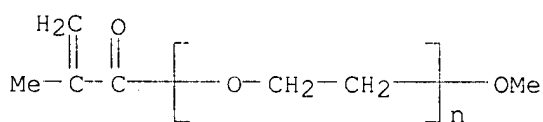
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(2-methyl-1-oxo-2-propen-1-yl)- $\omega$ -  
 methoxy-, polymer with ethenylbenzene (CA INDEX NAME)

CM 1

CRN 26915-72-0

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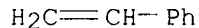
CCI PMS



CM 2

CRN 100-42-5

CMF C8 H8



RN 858181-45-0 HCAPLUS

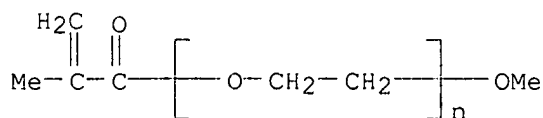
CN 2-Propenoic acid, 2-hydroxyethyl ester, polymer with ethenylbenzene and  
 $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-  
 ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

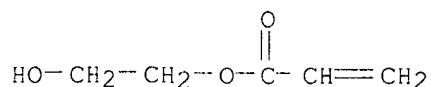
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CM 2

CRN 818-61-1

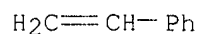
CMF C5 H8 O3



CM 3

CRN 100-42-5

CMF C8 H8



## RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Hitachi Chemical Co Ltd	2001			JP 200143731 A	
Sanyo Chemical Industri	2003			JP 2003257491 A	HCAPLUS

L40 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:323497 HCAPLUS

DN 142:395064

TI Polymer solid electrolytic electric battery, electrode and those production methods

IN Kanamura, Kiyoshi; Kawamura, Kiyoshi; Shintani, Takeshi; Shimada, Mikiya; Aoyagi, Koichiro

PA Nippon Soda Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 40 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005100966	A	20050414	JP 2004-240036	20040819 <--
JP 2003-295880	A	20030820	<--	

AB The disclosed battery contains polymer electrolyte comprising block copolymer having ethylene glycol derivative-acrylic acid derivative ester polymer

block, and vinyl polymer block(s). The disclosed electrodes for the battery contains electrode active substance, an electrolyte salt, and the block copolymer. Fabrication process for the battery is also disclosed. The polymer electrolyte has excellent thermal stability, phys. properties, and ion conductivity

IT 697284-07-4P 849950-63-6P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polymer electrolytes for lithium batteries)

RN 697284-07-4 HCAPLUS

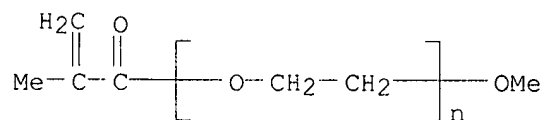
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxy-, polymer with ethenylbenzene, triblock (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)n C5 H8 O2

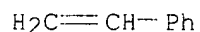
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CM 2

CRN 100-42-5

CMF C8 H8



RN 849950-63-6 HCAPLUS

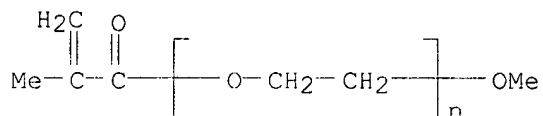
CN 2-Propenoic acid, 2-hydroxyethyl ester, polymer with ethenylbenzene and  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl), pentablock (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

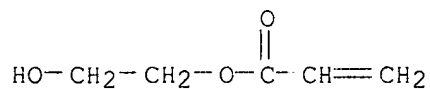
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CM 2

CRN 818-61-1

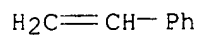
CMF C5 H8 O3



CM 3

CRN 100-42-5

CMF C8 H8



L40 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2005:260319 HCAPLUS  
DN 142:339051  
TI Composition for polymer solid electrolyte, polymer solid electrolyte,  
polymer solid electrolyte battery, ion-conductive membrane, copolymer and  
process for producing the copolymer  
IN Muramoto, Hiroo; Niitani, Takeshi; Aoyagi,  
Koichiro  
PA Nippon Soda Co., Ltd., Japan  
SO PCT Int. Appl., 128 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005027144	A1	20050324	WO 2004-JP576	20040123 <--
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RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2005089510	A	20050407	JP 2003-321155	20030912 <--
EP 1667168	A1	20060607	EP 2004-704735	20040123 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1849674	A	20061018	CN 2004-80025920	20040123 <--
US 20070040145	A1	20070222	US 2006-571998	20060309 <--
KR 779895	B1	20071128	KR 2006-706986	20060411 <--
PRAI JP 2003-321155	A	20030912 <--		
WO 2004-JP576	W	20040123 <--		

AB Polymer solid electrolytes excelling in thermal properties, phys.  
properties and ion conductivity and being close to practical level for use in  
batteries are disclosed. In particular, a composition for polymer solid  
electrolyte characterized in that the composition contains a copolymer and an  
electrolyte salt, the copolymer having repeating units of the formula:  
[CR1R2CR3CO2(CHR4aCHR4bO)mR5] (R1, R2, R3 = H, C1-C10 hydrocarbyl; R4a,  
R4b = H, Me; Me; R5 = H, hydrocarbyl, acyl, silyl; and m is an integer of  
1 to 100) and repeating units of the formula: CR6R7CR8R9 ( R6, R7, R8 = H,  
C1-C10 hydrocarbyl; R9 = an organic group having at least one functional  
group selected from hydroxyl, carboxyl, epoxy, an acid anhydride group and  
amino).

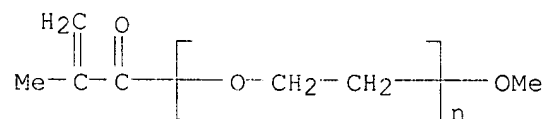
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848439-42-9DP, desilylated 848439-43-0DP, deethylated  
848439-44-1DP, debutylated 848442-02-4DP, desilylated  
848442-03-5P 849950-63-6P 877834-07-6P  
877837-29-1DP, desilylated  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(polymer electrolyte compns. containing)

RN 697284-07-4 HCAPLUS  
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -  
methoxy-, polymer with ethenylbenzene, triblock (9CI) (CA INDEX NAME)

CM 1

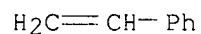
16 april 2008

CRN 26915-72-0  
CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
CCI PMS



CM 2

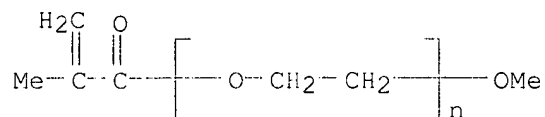
CRN 100-42-5  
CMF C8 H8



RN 848439-41-8 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, 2-[(trimethylsilyl)oxy]ethyl ester, polymer with ethenylbenzene and α-(2-methyl-1-oxo-2-propenyl)-ω-methoxypoly(oxy-1,2-ethanediyl), triblock (9CI) (CA INDEX NAME)

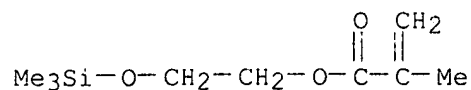
CM 1

CRN 26915-72-0  
CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
CCI PMS



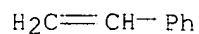
CM 2

CRN 17407-09-9  
CMF C9 H18 O3 Si



CM 3

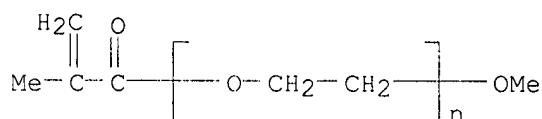
CRN 100-42-5  
CMF C8 H8



RN 848439-42-9 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, trimethylsilyl ester, polymer with  
 $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl), diblock (9CI) (CA INDEX NAME)

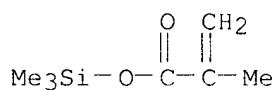
CM 1

CRN 26915-72-0  
 CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
 CCI PMS



CM 2

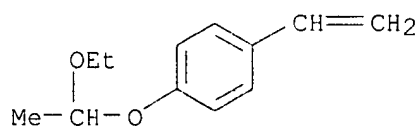
CRN 13688-56-7  
 CMF C7 H14 O2 Si



RN 848439-43-0 HCAPLUS  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxy-, polymer with ethenylbenzene and 1-ethenyl-4-(1-ethoxyethoxy)benzene, triblock (9CI) (CA INDEX NAME)

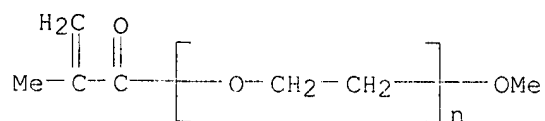
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CRN 157057-20-0  
 CMF C12 H16 O2



CM 2

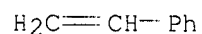
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 CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
 CCI PMS



CM 3

CRN 100-42-5

CMF C8 H8



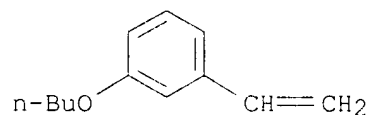
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 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxy-, polymer with 1-butoxy-3-ethenylbenzene and ethenylbenzene, block, graft (9CI) (CA INDEX NAME)

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CRN 156660-60-5

CMF C12 H16 O

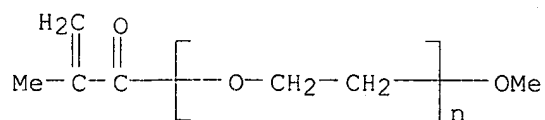


CM 2

CRN 26915-72-0

 CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

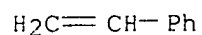
CCI PMS



CM 3

CRN 100-42-5

CMF C8 H8



RN 848442-02-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[(trimethylsilyl)oxy]ethyl ester, polymer



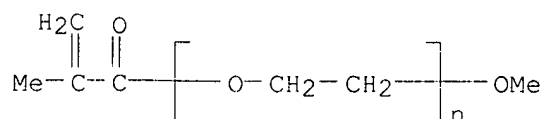
with  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl), triblock (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

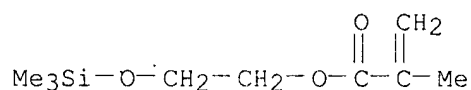
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CM 2

CRN 17407-09-9

CMF C9 H18 O3 Si



RN 848442-03-5 HCAPLUS

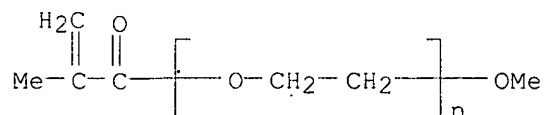
CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with ethenylbenzene and  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl), triblock (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

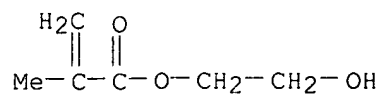
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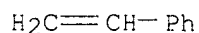
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CMF C6 H10 O3



CM 3

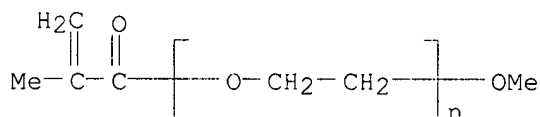
CRN 100-42-5  
CMF C8 H8



RN 849950-63-6 HCAPLUS  
CN 2-Propenoic acid, 2-hydroxyethyl ester, polymer with ethenylbenzene and  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl), pentablock (9CI) (CA INDEX NAME)

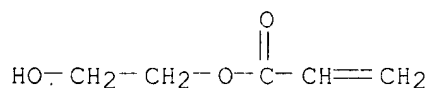
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CCI PMS



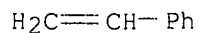
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CMF C5 H8 O3



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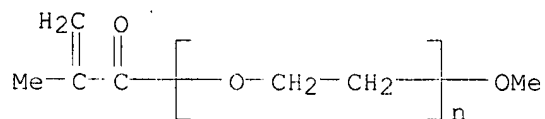
CRN 100-42-5  
CMF C8 H8



RN 877834-07-6 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with ethenylbenzene and  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl), graft (9CI) (CA INDEX NAME)

CM 1

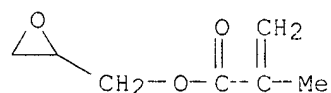
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CCI PMS



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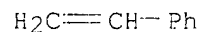
CMF C7 H10 O3



CM 3

CRN 100-42-5

CMF C8 H8



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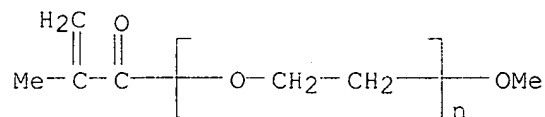
CN 2-Propenoic acid, 2-methyl-, trimethylsilyl ester, polymer with ethenylbenzene and  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl), pentablock (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

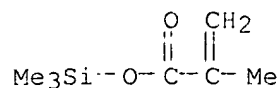
CCI PMS



CM 2

CRN 13638-56-7

CMF C7 H14 O2 Si



CM 3

CRN 100-42-5  
CMF C8 H8

H<sub>2</sub>C=CH-Ph

RETABLE

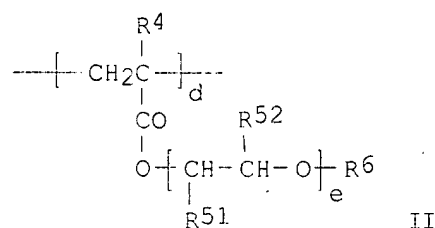
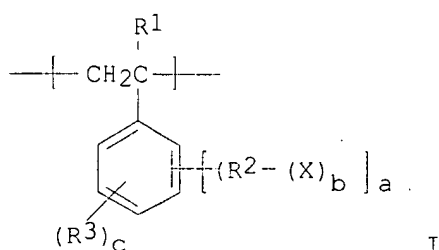
Referenced Author (RAU)	Year (RPY)	VOL. (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Fukoku Co Ltd	1998			JP 10-45994 A	HCAPLUS
Kanemura, K	2003		53	Nano Kozo o Seigyo S	
Matsushita Electric Ind	1993			JP 05-120912 A	HCAPLUS
Nippon Soda Co Ltd	2004			JP 2004107641 A	HCAPLUS
Nissan Motor Co Ltd	2003			JP 2003217594 A	HCAPLUS
Shimada, M	2003		53	Nano Kozo o Seigyo s	
Shin-Etsu Chemical Co L	1995			JP 07-109321 A	HCAPLUS
Shin-Etsu Chemical Co L	1995			JP 07-230810 A	HCAPLUS
Shintant, T	2003		52	Nano Kozo o Seigyo S	
Telefonaktiebolaget Lm	2003			WO 0146280 A1	HCAPLUS
Telefonaktiebolaget Lm	2003			US 20010033974 A1	
Telefonaktiebolaget Lm	2003			JP 2003518172 A	
Ube Industries Ltd	2002			JP 2002260441 A	HCAPLUS
Ube Industries Ltd	2003			JP 200345226 A	

L40 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2004:780751 HCAPLUS  
DN 141:278675  
TI Novel graft copolymer and process for producing the same  
IN Muramoto, Hiroo; Niitani, Takeshi  
PA Nippon Soda Co. Ltd., Japan  
SO PCT Int. Appl., 42 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004081068	A1	20040923	WO 2004-JP3055	20040310 <--

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 GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
 LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,  
 NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,  
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 TD, TG

PRAI JP 2003-69757 A 20030314 <--  
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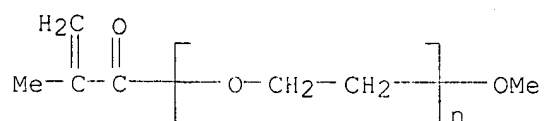


AB The present invention relates to (i) a novel graft copolymer which has polyether chains in branches and is usable as a base for solid electrolytes having high ionic conductivity and (ii) a solid electrolyte comprising the graft copolymer and an electrolyte salt. The copolymer is characterized by having repeating units I, wherein R1 = H or C1-10 a hydrocarbon group; R2 = an active halogen atom-containing functional group; R3 = a halogen atom, or an organic group; X = a copolymer having repeating units II and repeating units comprising a nonpolar moiety; R4 = H or a (substituted)C1-10 hydrocarbon group; R51, R52 = independently H, hydrocarbon, or C1-4 alkyl group; R6 = H, hydrocarbon, acyl, silyl, phosphoryl, hydrocarbon phosphoryl, or hydrocarbon phosphonyl group; a = 1-3 integer; b = 1 or 2; c = 0 or 1; d = 1-1000 integer; and e = 1-100 integer. Thus, 131.0 mmol 4-chloromethylstyrene was polymerized in the presence of 9.6 mmol 1-(2,2,6,6-tetramethylpiperidinyloxy)-1-phenylethane at 125° for 12 h to give a polymer with Mn 1300 and polydispersity 1.35, 0.7 mmol of which was polymerized with 400 mmol styrene at 125° for 24 h, graft-copolymerized with Blemmer PME 1000 to give a graft-block copolymer with Mn 310,000 and polydispersity 1.52, 2 g of which was dissolved in 18 g acetone, mixed with 0.2 g lithium perchlorate, cast onto a Teflon, and dried at 60° for 24 h to give a solid polymer electrolyte with ion conductivity  $5 \times 10^{-4}$  S/cm.

IT	760971-85-5P 760971-91-3P RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (Blemmer PME 400, intermediate; preparation of graft copolymers for solid polymer electrolytes)
RN	760971-85-5 HCAPLUS
CN	Poly(oxy-1,2-ethanediyl), $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ - methoxy-, polymer with 1-(chloromethyl)-4-ethenylbenzene and ethenylbenzene, block, graft (9CI) (CA INDEX NAME)

CM 1.

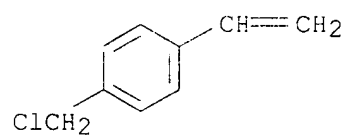
CRN 26915-72-0  
CMF (C2 H4 O)n C5 H8 O2  
CCI PMS



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CRN 1592-20-7

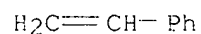
CMF C9 H9 Cl



CM 3

CRN 100-42-5

CMF C8 H8



RN 760971-91-3 HCAPLUS

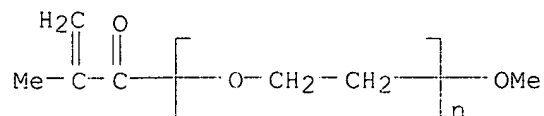
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxy-, polymer with 1-(chloromethyl)-4-ethenylbenzene and ethenylbenzene, graft, triblock (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

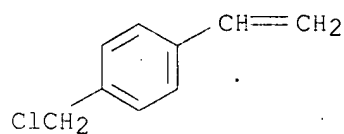
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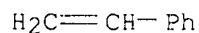
CMF C9 H9 Cl



CM 3

CRN 100-42-5

CMF C8 H8



IT 760971-85-5DP, lithium complexes, perchlorate-containing  
 760971-91-3DP, lithium complexes, perchlorate-containing  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or  
 engineered material use); PREP (Preparation); USES (Uses)  
 (Blemmer PME 400; preparation of graft copolymers for solid polymer  
 electrolytes)

RN 760971-85-5 HCAPLUS

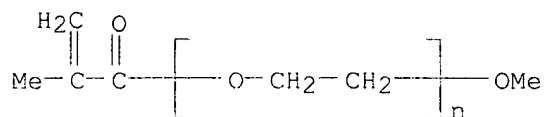
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -  
 methoxy-, polymer with 1-(chloromethyl)-4-ethenylbenzene and  
 ethenylbenzene, block, graft (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

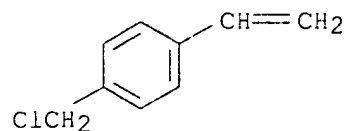
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CM 2

CRN 1592-20-7

CMF C9 H9 Cl



CM 3

CRN 100-42-5

CMF C3 H8

 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$ 

RN 760971-91-3 HCAPLUS

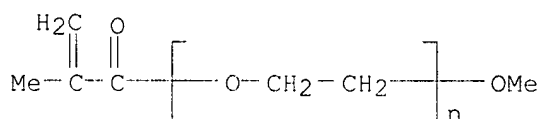
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxy-, polymer with 1-(chloromethyl)-4-ethenylbenzene and ethenylbenzene, graft, triblock (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

 CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

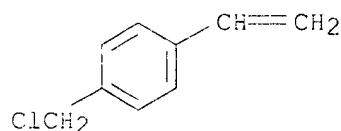
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CM 2

CRN 1592-20-7

CMF C9 H9 Cl



CM 3

CRN 100-42-5

CMF C8 H8

 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$ 

## RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Nippon Shokubai Co Ltd	2002			US 20010020084 A1	HCAPLUS
Nippon Shokubai Co Ltd	2002			JP 2002121218 A	HCAPLUS
Nippon Shokubai Co Ltd	2002			CA 2329635 A1	HCAPLUS
Nippon Soda Co Ltd	2002			JP 2002226513 A	HCAPLUS
Nippon Soda Co Ltd	2004			JP 2004107641 A	HCAPLUS
Shin-Etsu Chemical Co L	1999			JP 11-43523 A	HCAPLUS
Shin-Etsu Chemical Co L	2000			JP 2000281737 A	HCAPLUS
Shin-Etsu Chemical Co L	2000			US 6322924 B1	HCAPLUS



L40 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2004:609449 HCAPLUS  
 DN 141:165708  
 TI Composition of polymer solid electrolyte  
 IN Muramoto, Hiroo; Shintani, Takeshi  
 PA Nippon Soda Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 45 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004213940	A	20040729	JP 2002-379656	20021227 <--
PRAI	JP 2002-379656		20021227 <--		

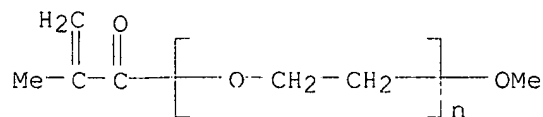
AB The title material is a total solid electrolyte and is characterized by having excellent thermal, phys., and ion conductive property. The polymer has an average mol. weight of 5000-1,000,000 and could contain the following substitution groups: hydrocarbon, acyl, silyl, carboxyl, hydroxide, amino group, ester group, and epoxy group. The repeating units of the defined group take 1-95% of the total repeating units in the copolymer. The electrolyte can be used for manufacturing of elec. cell, capacitor, sensor, EC element, or electro-optical conversion element.

IT 64696-14-6P 728930-40-3P 728930-41-4P  
 728938-25-8P 728938-30-5P 728938-31-6P  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (composition of polymer solid electrolyte for manufacturing of electrochem. devices)

RN 64696-14-6 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with ethenylbenzene and  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

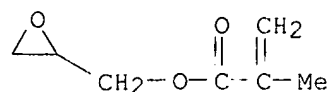
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 CCI PMS



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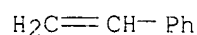
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CM 3

CRN 100-42-5

CMF C8 H8



RN 728930-40-3 HCAPLUS

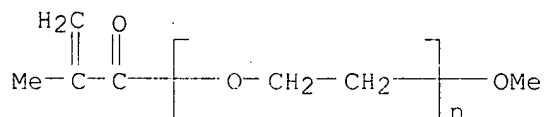
CN 2-Propenoic acid, 2-hydroxyethyl ester, polymer with ethenylbenzene and  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl), block (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

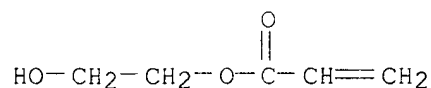
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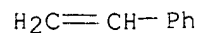
CMF C5 H8 O3



CM 3

CRN 100-42-5

CMF C8 H8



RN 728930-41-4 HCAPLUS

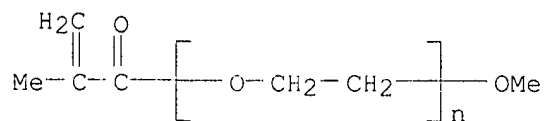
CN Phenol, 4-ethenyl-, polymer with ethenylbenzene and  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl), block (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

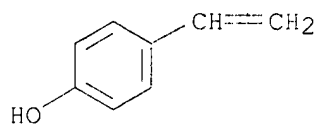
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CM 2

CRN 2628-17-3

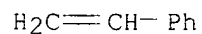
CMF C8 H8 O



CM 3

CRN 100-42-5

CMF C8 H8



RN 728938-25-8 HCAPLUS

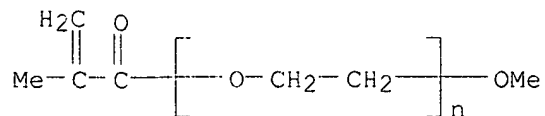
CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with ethenylbenzene and  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl), block (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

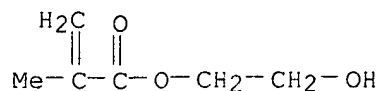
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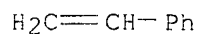
CMF C6 H10 O3



CM 3

CRN 100-42-5

CMF C8 H8



RN 728938-30-5 HCAPLUS

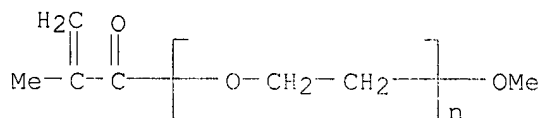
CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl), block (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

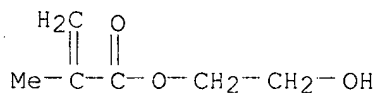
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CM 2

CRN 868-77-9

CMF C6 H10 O3



RN 728938-31-6 HCAPLUS

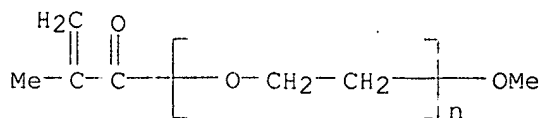
CN 2-Propenoic acid, 2-methyl-, polymer with  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl), block (9CI) (CA INDEX NAME)

CM 1

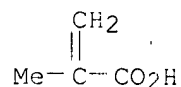
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CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

CCI PMS



CM 2

 CRN 79-41-4  
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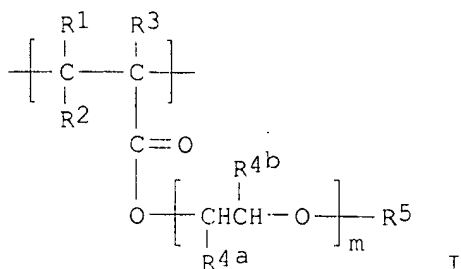
L40 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2004:80751 HCAPLUS  
 DN 140:149116  
 TI Solid polymer electrolyte  
 IN Muramoto, Hiroo; Niitani, Takeshi  
 PA Nippon Soda Co., Ltd., Japan  
 SO PCT Int. Appl., 54 pp.  
 CODEN: PIXXD2

DT Patent  
 LA Japanese

FAN.CNT 1

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	EP 1553117	A1	20050713	EP 2003-765362	20030723 <--
	EP 1553117	B1	20070117		
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	CN 1668662	A	20050914	CN 2003-817326	20030723 <--
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PRAI	JP 2002-214603	A	20020723	<--	
	WO 2003-JP9328	W	20030723	<--	

GI



AB The present invention relates to (i) a solid polymer electrolyte which is excellent in thermal properties, phys. properties, and ionic conductivity and is on a level close to a practical level, especially a wholly solid electrolyte and

(ii) a copolymer composition serving as a base for producing the electrolyte. The solid polymer electrolyte comprises (A) a copolymer comprising a block chain A comprising repeating units I, a block chain B comprising repeating units (CR<sup>6</sup>R<sup>7</sup>CR<sup>8</sup>R<sup>9</sup>), and a block chain C comprising repeating units (CR<sup>10</sup>R<sup>11</sup>CR<sup>12</sup>R<sup>13</sup>), these chains being arranged in the order of B, A, and C, and (B) an electrolyte salt, wherein R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> = independently H or C<sub>1</sub>-10 hydrocarbon, R<sup>1</sup> and R<sup>3</sup> may form a ring; R<sup>4a</sup>, R<sup>4b</sup> = independently H or methyl; R<sup>5</sup> = H, hydrocarbon, acyl, or silyl group; R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup> = independently H or C<sub>1</sub>-10 hydrocarbon; R<sup>9</sup> = aryl; R<sup>13</sup> = aryl or heteroaryl; and m = 2-100 integer. Thus, 22.35 g Blemmer PME 1000 was polymerized in the presence of dichlorotris(triphenylphosphine)ruthenium, di-n-butylamine, and 2,2-dichloroacetophenone to give a polymer with Mn 122,500, 6.13 g of which was polymerized with 2.60 g styrene to give a styrene-polyoxyalkylene graft block copolymer with Mn 135,000, 1 g of which was mixed with 0.09 g lithium perchlorate, cast on a Teflon plat, and dried at room temperature for 24 h and 60° for 24 h to give a solid polymer electrolyte with ionic conductivity 3.8 + 10<sup>-4</sup> S/cm at 23°.

IT 112119-04-7DP, lithium complexes, perchlorate-containing  
112119-04-7P 651724-21-9P 697284-07-4P  
846569-40-2P

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (triblock; preparation of solid polymer electrolytes with good thermal properties, phys. properties, and ionic conductivity)

RN 112119-04-7 HCAPLUS

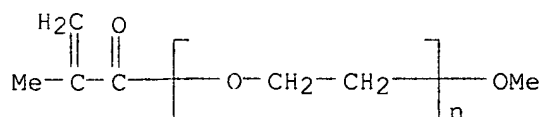
CN Poly(oxy-1,2-ethanediyl), α-(2-methyl-1-oxo-2-propen-1-yl)-ω-methoxy-, polymer with ethenylbenzene, block (CA INDEX NAME)

CM 1

CRN 26915-72-0

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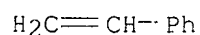
CCI PMS



CM 2

CRN 100-42-5

CMF C8 H8



RN 112119-04-7 HCAPLUS

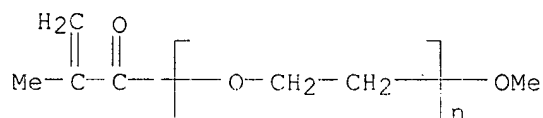
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(2-methyl-1-oxo-2-propen-1-yl)- $\omega$ -methoxy-, polymer with ethenylbenzene, block (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

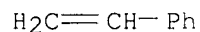
CCI PMS



CM 2

CRN 100-42-5

CMF C8 H8



RN 651724-21-9 HCAPLUS

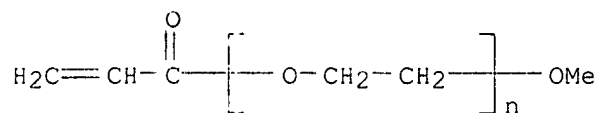
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -methoxy-, polymer with ethenylbenzene, block (9CI) (CA INDEX NAME)

CM 1

CRN 32171-39-4

CMF (C2 H4 O)<sub>n</sub> C4 H6 O2

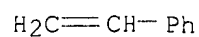
CCI PMS



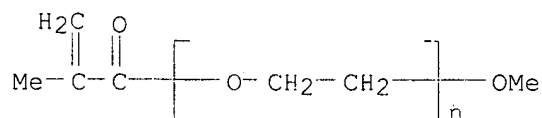
CM 2

CRN 100-42-5

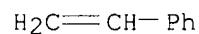
CMF C8 H8



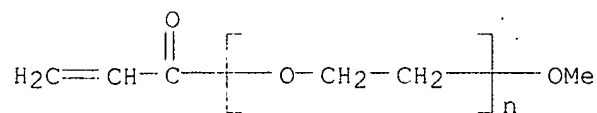
RN 697284-07-4 HCAPLUS  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxy-, polymer with ethenylbenzene, triblock (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 26915-72-0  
 CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
 CCI PMS



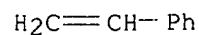
CM 2  
 CRN 100-42-5  
 CMF C8 H8



RN 846569-40-2 HCAPLUS  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -methoxy-, polymer with ethenylbenzene, triblock (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 32171-39-4  
 CMF (C2 H4 O)<sub>n</sub> C4 H6 O2  
 CCI PMS



CM 2  
 CRN 100-42-5  
 CMF C8 H8



IT 651724-21-9DP, lithium complexes, perchlorate-containing  
 697284-07-4DP, lithium complexes, perchlorate-containing



846569-40-2DP, lithium complexes, perchlorate-containing  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or  
 engineered material use); PREP (Preparation); USES (Uses)  
 (triblock; preparation of solid polymer electrolytes with good thermal  
 properties, phys. properties, and ionic conductivity)

RN 651724-21-9 HCAPLUS

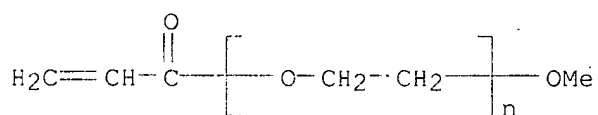
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -methoxy-,  
 polymer with ethenylbenzene, block (9CI) (CA INDEX NAME)

CM 1

CRN 32171-39-4

CMF (C2 H4 O)<sub>n</sub> C4 H6 O2

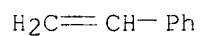
CCI PMS



CM 2

CRN 100-42-5

CMF C8 H8



RN 697284-07-4 HCAPLUS

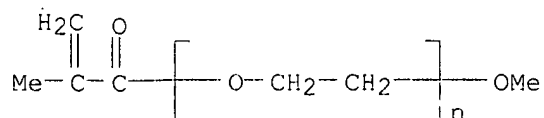
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -  
 methoxy-, polymer with ethenylbenzene, triblock (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

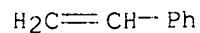
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CM 2

CRN 100-42-5

CMF C8 H8



RN 846569-40-2 HCAPLUS

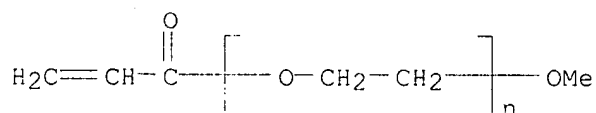
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -methoxy-, polymer with ethenylbenzene, triblock (9CI) (CA INDEX NAME)

CM 1

CRN 32171-39-4

CMF (C2 H4 O)<sub>n</sub> C4 H6 O2

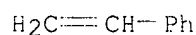
CCI PMS



CM 2

CRN 100-42-5

CMF C8 H8



# RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Shin-Etsu Chemical Co L	1998			JP 10-208545 A	HCAPLUS
Shin-Etsu Chemical Co L	1998			JP 10-237143 A	HCAPLUS
Shin-Etsu Chemical Co L	1998			US 6096234 A1	HCAPLUS
Shin-Etsu Chemical Co L	1999			JP 11-43523 A	HCAPLUS
Ube Industries Ltd	1991			JP 03-196407 A	HCAPLUS

L40 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1989:479596 HCAPLUS

DN 111:79596

OREF 111:13411a,13414a

TI Modified 1,2-polybutadiene for lamination and potting

IN **Muramoto, Hiroo**; Sato, Fumio; Takahashi, Eiji; Nakamura, Shigeru

PA **Nippon Soda Co., Ltd., Japan**

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DT **Patent**

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01056706	A	19890303	JP 1987-213898	19870827 <--
PRAI	JP 1987-213898		19870827 <--		

AB Resins (m.p.  $\geq 35^\circ$ ) giving cured products with good processability and adhesion and low shrinkage are prepared from carboxylated butadiene-vinylarom. compound copolymers (number-average mol. weight 500-20,000; vinyl

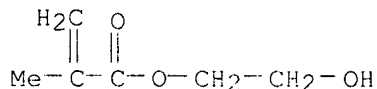
microstructure  $\geq 50\%$ ) and epoxy allyl ethers, glycidyl (meth)acrylate, and/or polyepoxide (meth)acrylates. A CO<sub>2</sub>H-terminated 61.2:38.8 butadiene-styrene copolymer (mol. weight  $\geq 200$ ; vinyl microstructure 90.3%, m.p.  $58^\circ$ ) was diluted with 20 phr styrene and

30 phr 2-hydroxyethyl methacrylate and mixed with 2 phr dicumyl peroxide to give an adhesive which, when cured, showed 5.1% shrinkage, tensile shear strength 155 kg/cm<sup>2</sup>, and peel strength 3.8 kg/25 mm.

IT 121913-09-5, Butadiene-2-hydroxyethyl methacrylate- $\alpha$ -methylstyrene-styrene graft copolymer 121961-18-0, Butadiene-2-hydroxyethyl methacrylate-styrene graft copolymer  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (adhesives, with high shear strength and low shrinkage)  
 RN 121913-09-5 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with 1,3-butadiene, ethenylbenzene and (1-methylethenyl)benzene, graft (9CI)  
 (CA INDEX NAME)

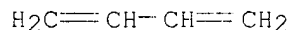
CM 1

CRN 868-77-9  
 CMF C6 H10 O3



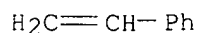
CM 2

CRN 106-99-0  
 CMF C4 H6



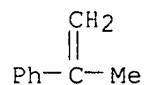
CM 3

CRN 100-42-5  
 CMF C8 H8



CM 4

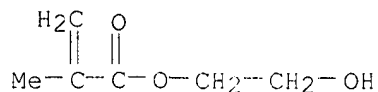
CRN 98-83-9  
 CMF C9 H10



RN 121961-18-0 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with 1,3-butadiene and ethenylbenzene, graft (9CI) (CA INDEX NAME)

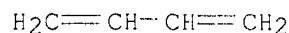
CM 1

CRN 868-77-9  
CMF C6 H10 O3



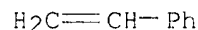
CM 2

CRN 106-99-0  
CMF C4 H6



CM 3

CRN 100-42-5  
CMF C8 H8



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STRUCTURE FILE UPDATES: 15 APR 2003 HIGHEST RN 1015083-77-8  
DICTIONARY FILE UPDATES: 15 APR 2003 HIGHEST RN 1015083-77-8

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TSCA INFORMATION NOW CURRENT THROUGH January 9, 2008.

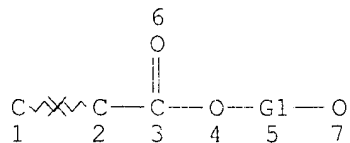
Please note that search-term pricing does apply when  
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REGISTRY includes numerically searchable data for experimental and  
predicted properties as well as tags indicating availability of  
experimental property data in the original document. For information  
on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=> d sta que 175

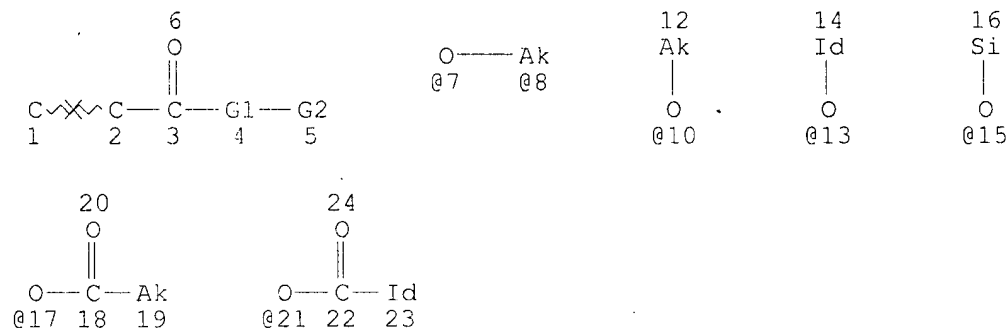
L41 613394 SEA FILE=REGISTRY ABB=ON PLU=ON PMS/CI AND NC>=2 AND O>=3  
 L42 STR



VAR G1=AK/ID  
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 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 7

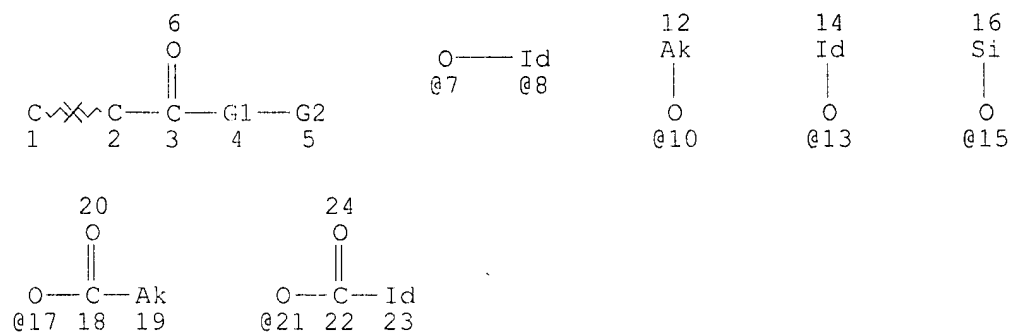
STEREO ATTRIBUTES: NONE  
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 L45 STR



REP G1=(1-20) 7-3 8-5  
 VAR G2=OH/10/13/17/21/15  
 NODE ATTRIBUTES:  
 CONNECT IS M1 RC AT 1  
 CONNECT IS M1 RC AT 2  
 CONNECT IS M1 RC AT 16  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 22

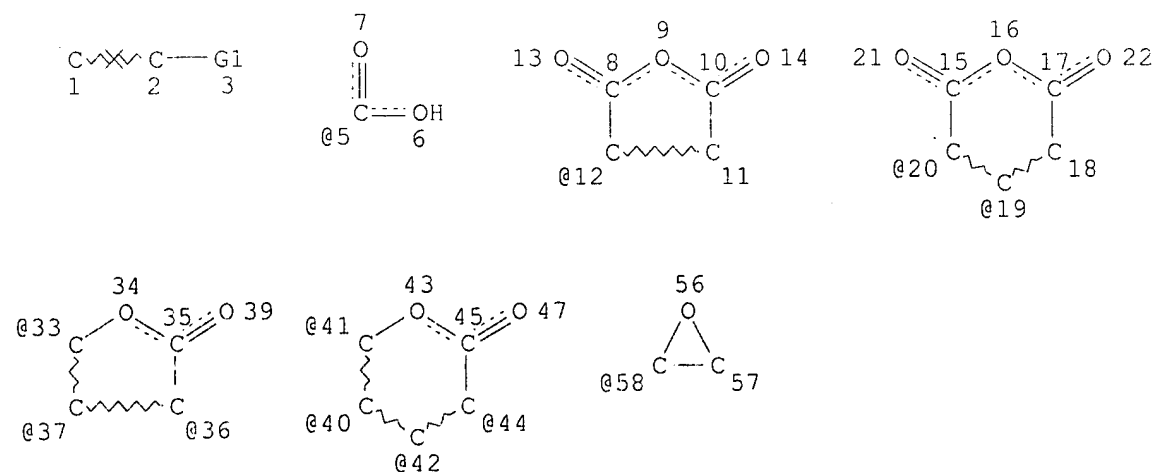
STEREO ATTRIBUTES: NONE  
 L47 120715 SEA FILE=REGISTRY SUB=L44 CSS FUL L45  
 L48 STR



REP G1=(1-20) 7-3 8-5  
 VAR G2=OH/10/13/17/21/15  
 NODE ATTRIBUTES:  
 CONNECT IS M1 RC AT 1  
 CONNECT IS M1 RC AT 2  
 CONNECT IS M1 RC AT 16  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 22

STEREO ATTRIBUTES: NONE  
 L50 1394 SEA FILE=REGISTRY SUB=L44 CSS FUL L48  
 L51 120715 SEA FILE=REGISTRY ABB=ON PLU=ON (L47 OR L50)  
 L52 8186 SEA FILE=REGISTRY ABB=ON PLU=ON L44 AND (C2H4O OR C3H6O OR C4H8O) NOT L51  
 L53 2793 SEA FILE=REGISTRY ABB=ON PLU=ON L44 AND C3H6O AND C2H4O  
 L54 438 SEA FILE=REGISTRY ABB=ON PLU=ON L44 AND C3H6O AND C4H8O  
 L55 935 SEA FILE=REGISTRY ABB=ON PLU=ON L44 AND C2H4O AND C4H8O  
 L56 2987 SEA FILE=REGISTRY ABB=ON PLU=ON (L53 OR L54 OR L55) NOT L52  
 L57 120715 SEA FILE=REGISTRY ABB=ON PLU=ON (L56 OR L51)  
 L58 STR



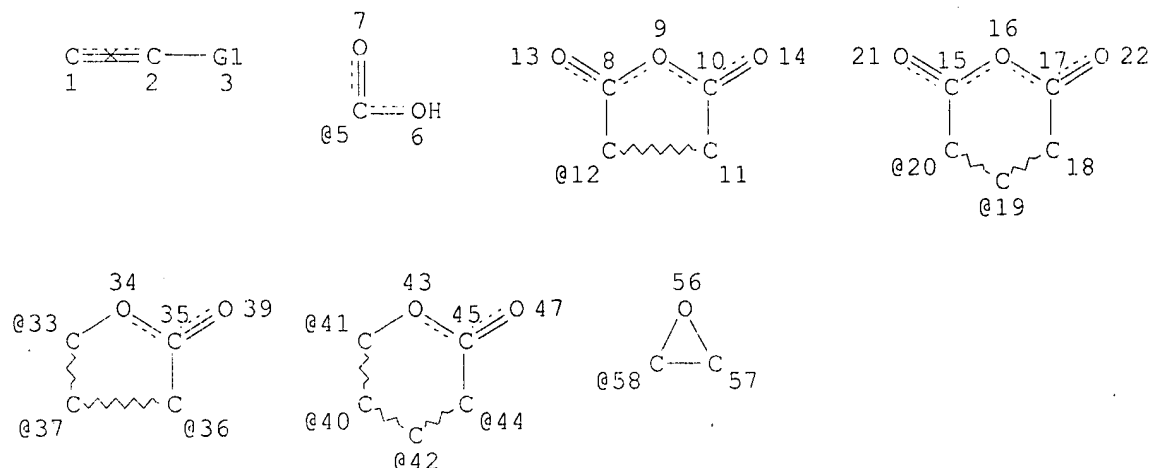
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 NODE ATTRIBUTES:

16 april 2008

DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RSPEC 8 20 33 41 56  
NUMBER OF NODES IS 37

STEREO ATTRIBUTES: NONE  
L60 93973 SEA FILE=REGISTRY SUB=L57 SSS FUL L58  
L73 STR



VAR G1=OH/5/58/NH2/12/20/19/33/37/36/41/40/42/44

NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RSPEC 8 20 33 41 56  
NUMBER OF NODES IS 37

STEREO ATTRIBUTES: NONE  
L75 46979 SEA FILE=REGISTRY SUB=L60 SSS FUL L73

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=> d l124 bib abs hitind hitstr retable tot

L124 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:752771 HCAPLUS

DN 139:263301

TI Binder resin for **battery electrode** in secondary lithium **battery**

IN Nakazawa, Satoshi; Mashimo, Kiyotaka; Suzuki, Kenji; Sonobe, Hiroyuki; Haba, Eisuke

PA Hitachi Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT **Patent**

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003268053	A	20030925	JP 2002-69058	20020313 <--
PRAI	JP 2002-69058		20020313 <--		

AB The resin containing CO<sub>2</sub>H is obtained by copolymerizing acrylic acid and/or methacrylic acid 10-95, CH<sub>2</sub>:CR<sub>1</sub>CO<sub>2</sub>(R<sub>2</sub>)<sub>n</sub>R<sub>3</sub> (n ≥ 1; R<sub>1</sub> = H, Me; R<sub>2</sub> = C<sub>1</sub>-4 alkylene; R<sub>3</sub> = H, C<sub>1</sub>-20 alkyl) 1-50, and comonomers 0-89 weight% and has acid value 70-750 KOHmg/g. The **electrode** using the binder resin has high flexibility and **electrolyte** resistance and gives a long-life **battery**.

IC ICM C08F0290-06  
ICS C08F0220-06; C08F0220-28; H01M0004-02; H01M0004-58  
; H01M0004-62; H01M0010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38

ST lithium **battery electrode** binder acrylic acid polymer;  
methacrylic acid polymer binder **electrode** lithium  
**battery**; polyoxyalkylene graft acrylic polymer binder  
**electrode battery**

IT Polyoxyalkylenes, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(acrylic, graft; carboxy-containing acrylic polyoxyalkylene polymer binder  
with high flexibility and **electrolyte** resistance for  
**electrode** in Li **battery**)

IT **Battery electrodes**  
Binders  
(carboxy-containing acrylic polyoxyalkylene polymer binder with high  
flexibility and **electrolyte** resistance for **electrode**  
in Li **battery**)

IT **Secondary batteries**  
(lithium; carboxy-containing acrylic polyoxyalkylene polymer binder with  
high flexibility and **electrolyte** resistance for  
**electrode** in Li **battery**)



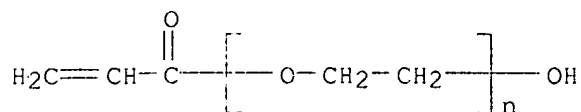
- IT 7440-44-0, Carbon, uses  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (amorphous, **anode**; carboxy-containing acrylic polyoxyalkylene polymer binder with high flexibility and **electrolyte** resistance for **electrode** in Li **battery**)
- IT 7782-42-5, Graphite, uses  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (**anode**; carboxy-containing acrylic polyoxyalkylene polymer binder with high flexibility and **electrolyte** resistance for **electrode** in Li **battery**)
- IT 109326-78-5P, Acrylic acid-polyethylene glycol monoacrylate graft copolymer 109327-03-9P 109327-05-1P 474937-06-9P 601496-96-2P 602299-96-7P  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (carboxy-containing acrylic polyoxyalkylene polymer binder with high flexibility and **electrolyte** resistance for **electrode** in Li **battery**)
- IT 39300-70-4, Lithium nickel oxide 52627-24-4, Cobalt lithium oxide 176979-24-1, Lithium manganese oxide (Li1.12Mn1.88O4) 312636-38-7, Lithium manganese oxide (Li0.2-2.5Mn0.8-1.25O2)  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (**cathode**; carboxy-containing acrylic polyoxyalkylene polymer binder with high flexibility and **electrolyte** resistance for **electrode** in Li **battery**)
- IT 112344-11-3P, Acrylic acid-ethylene oxide graft copolymer 152522-69-5P, Acrylic acid-propylene oxide graft copolymer  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (comprised of actual and assumed monomers; carboxy-containing acrylic polyoxyalkylene polymer binder with high flexibility and **electrolyte** resistance for **electrode** in Li **battery**)
- IT 109326-78-5P, Acrylic acid-polyethylene glycol monoacrylate graft copolymer 109327-03-9P 109327-05-1P 474937-06-9P  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (carboxy-containing acrylic polyoxyalkylene polymer binder with high flexibility and **electrolyte** resistance for **electrode** in Li **battery**)
- RN 109326-78-5 HCAPLUS
- CN 2-Propenoic acid, polymer with  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -hydroxypoly(oxy-1,2-ethanediyl), graft (9CI) (CA INDEX NAME)

CM 1

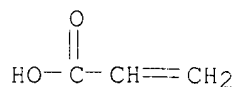
CRN 26403-58-7

CMF (C2 H4 O)n C3 H4 O2

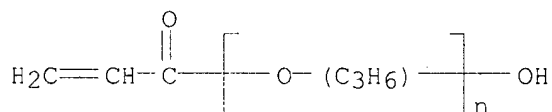
CCI PMS



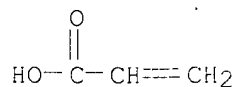
CM 2

 CRN 79-10-7  
 CMF C3 H4 O2

 RN 109327-03-9 HCAPLUS  
 CN 2-Propenoic acid, polymer with  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -hydroxypoly[oxy(methyl-1,2-ethanediyl)], graft (9CI) (CA INDEX NAME)

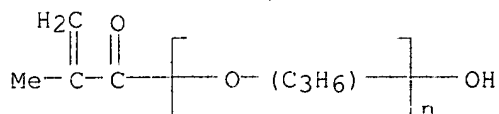
CM 1

 CRN 50858-51-0  
 CMF (C3 H6 O)<sub>n</sub> C3 H4 O2  
 CCI IDS, PMS


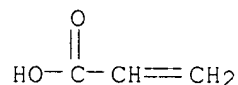
CM 2

 CRN 79-10-7  
 CMF C3 H4 O2

 RN 109327-05-1 HCAPLUS  
 CN 2-Propenoic acid, polymer with  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -hydroxypoly[oxy(methyl-1,2-ethanediyl)], graft (9CI) (CA INDEX NAME)

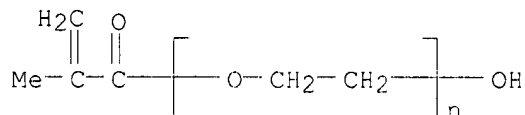
CM 1

 CRN 39420-45-6  
 CMF (C3 H6 O)<sub>n</sub> C4 H6 O2  
 CCI IDS, PMS


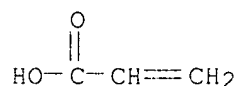
CM 2

 CRN 79-10-7  
 CMF C3 H4 O2

 RN 474937-06-9 HCAPLUS  
 CN 2-Propenoic acid, polymer with  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -hydroxypoly(oxy-1,2-ethanediyl), graft (9CI) (CA INDEX NAME)

CM 1

 CRN 25736-86-1  
 CMF (C2 H4 O)<sub>n</sub> C4 H6 O2  
 CCI PMS


CM 2

 CRN 79-10-7  
 CMF C3 H4 O2


L124 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:85610 HCAPLUS

DN 138:321995

TI Synthesis and properties of low-molecular-weight polymer

**electrolyte**

AU Qi, Li; Ouyang, Wu-ye; Dong, Shao-jun

CS Changchun Institute of Applied Chemistry, State Key Laboratory of Electroanalytical Chemistry, Chinese Academy of Sciences, Changchun, 130022, Peop. Rep. China

SO Gongneng Gaofenzi Xuebao (2002), 15(4), 430-436

CODEN: GGXUEH; ISSN: 1004-9843

PB Gongneng Gaofenzi Xuebao Bianjibu

DT Journal

LA Chinese

 AB The pectination polymer **electrolyte** was designed and synthesized, which is especially suitable for characterization by ultramicro-**electrode**. According to design, first, methacrylic acid poly(ethylene glycol) Me ether esters of different mol. weight were prepared Further, comblike polymer **electrolyte** whose average  $M_w$  was

about 10 000 was synthesized. The results indicated that reaction followed the reaction equation strictly. Refined product was an amorphous comblike polymer. It has two glass transition temps., one is host-chain's ( about 100°C ), the other is side-chain' s( under -20°C ).

The side-chain can move under room temperature, which help to transfer and expand of electroactive material. This low mol. weight polymer

**electrolyte** can be studied by ultramicro - **electrode**.

CC 37-5 (Plastics Manufacture and Processing)

ST polyethylene glycol graft polymer **electrolyte** thermal elec property

IT Polyoxyalkylenes, preparation

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(acrylate-terminated, polymers, macromer; synthesis and properties of low-mol.-weight polymer **electrolyte**)

IT Polyoxyalkylenes, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (acrylic, graft; synthesis and properties of low-mol.-weight polymer **electrolyte**)

IT Diffusion

(of ferrocene in low-mol.-weight polymer **electrolyte**)

IT Acrylic polymers, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (polyoxyalkylene-, graft; synthesis and properties of low-mol.-weight polymer **electrolyte**)

IT Polymer chains

(side; effect on properties of low-mol.-weight polymer **electrolyte**)

IT Electric conductivity

Glass transition temperature

Polymer chains

**Polymer electrolytes**

Thermal stability

(synthesis and properties of low-mol.-weight polymer **electrolyte**)

IT 26915-72-0P, Polyethylene glycol methacrylate methyl ether

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(macromer; synthesis and properties of low-mol.-weight polymer **electrolyte**)

IT 102-54-5, Ferrocene

RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)

(synthesis and properties of low-mol.-weight polymer **electrolyte**)

IT 7439-93-2D, Lithium, polyethylene glycol graft copolymer complexes, perchlorate-containing 207973-61-3D, lithium complexes,

perchlorate-containing 314065-74-2D, Acrylic acid-ethylene oxide graft copolymer methyl ether, lithium complexes, perchlorate-containing

RL: PRP (Properties)

(synthesis and properties of low-mol.-weight polymer **electrolyte**)

IT 207973-61-3P 314065-74-2P, Acrylic acid-ethylene oxide graft copolymer methyl ether

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (synthesis and properties of low-mol.-weight polymer **electrolyte**)

IT 207973-61-3D, lithium complexes, perchlorate-containing

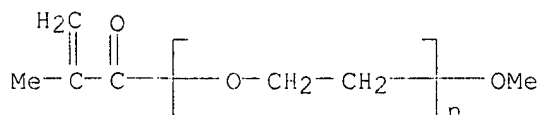
RL: PRP (Properties)

(synthesis and properties of low-mol.-weight polymer **electrolyte**)

)  
 RN 207973-61-3 HCAPLUS  
 CN 2-Propenoic acid, polymer with  $\alpha$ -(2-methyl-1-oxo-2-propen-1-yl)-  
 $\omega$ -methoxypoly(oxy-1,2-ethanediyl), graft (CA INDEX NAME)

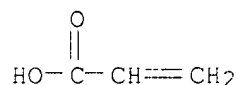
CM 1

CRN 26915-72-0  
 CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
 CCI PMS



CM 2

CRN 79-10-7  
 CMF C3 H4 O2



RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (synthesis and properties of low-mol.-wt. polymer **electrolyte**)

L124 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:848352 HCAPLUS

DN 137:344917

TI Composition for forming gel **electrolyte** for aluminum  
**electrolytic** capacitor and fabrication of gel **electrolyte**  
 for aluminum **electrolytic** capacitor

IN Yamashita, Atsushi; Fukuda, Takeshi; Watanabe, Kimihiro

PA Toyo Rubber Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT **Patent**

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002324734	A	20021108	JP 2001-127951	20010425 <--
PRAI	JP 2001-127951		20010425 <--		

AB The title composition comprises a polymerizing monomer, **electrolyte**, and  
 radical-polymerization initiator having a 10-h half-lifetime temperature 50 -

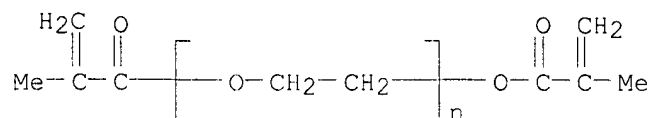
170

°C. A method for fabricating a gel **electrolyte** involves  
 impregnating an **electrode** of an aluminum **electrolytic**  
 capacitor with the above composition and heating at 50 - 170 °C. A  
 thermally stable gel **electrolyte** having a high ionic conductivity is  
 obtained.

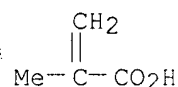
IC ICM H01G0009-035

ICS C08F0002-44; H01G0009-00

CC 76-10 (Electric Phenomena)  
 ST aluminum **electrolytic** capacitor gel polymer **electrolyte**  
 radical polymn initiator  
 IT **Electrolytic** capacitors  
     **Polymer electrolytes**  
         (radical-polymerization initiator of composition for forming gel  
         **electrolyte** for aluminum **electrolytic** capacitor and  
         fabrication of gel **electrolyte** for aluminum  
         **electrolytic** capacitor by radical polymerization)  
 IT Polymerization  
     Polymerization catalysts  
         (radical; radical-polymerization initiator of composition for forming gel  
         **electrolyte** for aluminum **electrolytic** capacitor and  
         fabrication of gel **electrolyte** for aluminum  
         **electrolytic** capacitor by radical polymerization)  
 IT 78-67-1 94-36-0, Benzoyl peroxide, uses 614-45-9, Perbutyl Z  
 RL: CAT (Catalyst use); USES (Uses)  
     (radical-polymerization initiator of composition for forming gel  
     **electrolyte** for aluminum **electrolytic** capacitor and  
     fabrication of gel **electrolyte** for aluminum  
     **electrolytic** capacitor by radical polymerization)  
 IT 7429-90-5, Aluminum, uses  
 RL: DEV (Device component use); USES (Uses)  
     (radical-polymerization initiator of composition for forming gel  
     **electrolyte** for aluminum **electrolytic** capacitor and  
     fabrication of gel **electrolyte** for aluminum  
     **electrolytic** capacitor by radical polymerization)  
 IT 37281-56-4P, Blemmer PE-200-Light Ester 9EG copolymer **86944-80-1P**  
     , Light Ester 9EG-methacrylic acid copolymer 108927-94-2P, Blemmer  
     PDE-400-Blemmer PME-400 copolymer 428876-95-3P, Butyl methacrylate-Light  
     Ester 9EG-Light Ester 130MA copolymer 443680-26-0P, Blemmer PE 200-Light  
     Ester TMP copolymer 473926-40-8P, Blemmer PE 200-Light Ester G 101P  
     copolymer  
     RL: DEV (Device component use); PNU (Preparation, unclassified); TEM  
     (Technical or engineered material use); PREP (Preparation); USES (Uses)  
     (radical-polymerization initiator of composition for forming gel  
     **electrolyte** for aluminum **electrolytic** capacitor and  
     fabrication of gel **electrolyte** for aluminum  
     **electrolytic** capacitor by radical polymerization)  
 IT **86944-80-1P**, Light Ester 9EG-methacrylic acid copolymer  
     RL: DEV (Device component use); PNU (Preparation, unclassified); TEM  
     (Technical or engineered material use); PREP (Preparation); USES (Uses)  
     (radical-polymerization initiator of composition for forming gel  
     **electrolyte** for aluminum **electrolytic** capacitor and  
     fabrication of gel **electrolyte** for aluminum  
     **electrolytic** capacitor by radical polymerization)  
 RN **86944-80-1** HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, polymer with  $\alpha$ -(2-methyl-1-oxo-2-propen-  
     1-yl)- $\omega$ -[(2-methyl-1-oxo-2-propen-1-yl)oxy]poly(oxy-1,2-ethanediyl)  
     (CA INDEX NAME)  
 CM 1  
 CRN 25852-47-5  
 CMF (C2 H4 O)<sub>n</sub> C8 H10 O3  
 CCI PMS



CM 2

 CRN 79-41-4  
 CMF C4 H6 O2


L124 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1986:534516 HCAPLUS

DN 105:134516

OREF 105:21723a,21726a

TI Polymeric ionic conductors

IN Kobayashi, Norihisa; Uchiyama, Masahiro; Tsuchida, Hidetoshi

PA Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 61047713	A	19860308	JP 1984-168820	19840814 <--
PRAI	JP 1984-168820		19840814	<--	

AB A polymeric ionic conductor forming flexible films and useful in solid-**electrolyte batteries** and electrochromic display devices comprises 1-40 mol% (meth)acrylic acid (or its Li, Na, or K salt) and 60-99 mol% polyethylene glycol (d. p. 3-20) mono(meth)acrylate. Thus, a mixture of 0.5 g polyethylene glycol (d.p. 5) Me ether methacrylate (I) (mol. weight 250) and 0.05 g Li methacrylate in 5 mL MeOH containing AIBN (in

an amount of 1 mol/mol-I) was cast on a Teflon plate and polymerized at 100° for 24 h under reduced pressure to give a 0.13-mm polymeric film (mol. weight 53,000) exhibiting ionic conductivity  $1.1 \times 10^{-7}$  S/cm.

IC ICM C08F0220-28

ICI C08F0220-28, C08F0220-06

 CC 35-4 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 72, 76

 ST polyethylene glycol methacrylate copolymer; lithium methacrylate copolymer ionic conductor; solid **electrolyte battery** polymeric conductor; electrochromic display device polymeric conductor

 IT Electric conductors  
 (ionic, methacrylic acid (salt)-polyethylene glycol (meth)acrylate copolymers as, film-formable, for solid-**electrolyte batteries** or electrochromic display devices)

 IT **Batteries, secondary**  
 (solid-**electrolyte**, methacrylic acid (salt)-polyethylene glycol (meth)acrylate copolymers for)

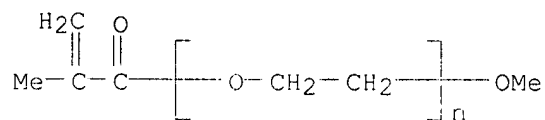
IT 87228-08-8 95410-90-5 102814-54-0 104491-11-4 104491-12-5  
 104491-13-6 104491-14-7 104491-16-9  
 RL: USES (Uses)  
 (films, ionic conductive, for solid-electrolyte  
 batteries or electrochromic display apparatus)  
 IT 87228-08-8  
 RL: USES (Uses)  
 (films, ionic conductive, for solid-electrolyte  
 batteries or electrochromic display apparatus)  
 RN 87228-08-8 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, polymer with  $\alpha$ -(2-methyl-1-oxo-2-propen-1-yl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

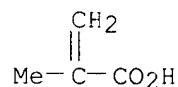
CCI PMS



CM 2

CRN 79-41-4

CMF C4 H6 O2



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L189 ANSWER 1 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2004:739448 HCAPLUS

DN 141:269978

TI Solid electrolytic capacitor

IN Honda, Kazumitsu; Takaoka, Ryoko; Tsubaki, Yuichiro; Watanabe, Yoshihiro

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 24 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004253537	A	20040909	JP 2003-41108	20030219 <--
PRAI	JP 2003-41108		20030219 <--		
AB	A solid electrolytic capacitor having superior				

16 april 2008



impedance, ESR, and withstand-voltage properties comprises an anode of a valve metal having a **dielec.** oxide film, a cathode facing the anode, and a solid **polymer electrolyte** of an ion-**conductive electrolyte** in a matrix of a acrylate copolymer and an electron-**conductive electrolyte**. Specifically, the valve metal may comprise Al, Ta, or Nb, and the electron-**conductive electrolyte** may comprise polypyrrole, polythiophene, polyaniline, polyethylenedioxythiophene, and/or sulfonated polyaniline.

- IC ICM H01G0009-035  
ICS H01G0009-14
- CC 76-10 (Electric Phenomena)
- ST solid **electrolytic capacitor polymer electrolyte**
- IT **Electrolytic capacitors**  
    **Polymer electrolytes**  
        (polymer electrolyte of solid electrolytic capacitor)
- IT Polyanilines  
    RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
        (polymer electrolyte of solid electrolytic capacitor)
- IT 7429-90-5, Aluminum, uses 7440-03-1, Niobium, uses 7440-25-7, Tantalum, uses  
    RL: DEV (Device component use); USES (Uses)  
        (polymer electrolyte of solid electrolytic capacitor)
- IT 79-10-7D, Acrylic acid, esters, **polymers** 1709-72-4D, C1-5-alkyl derivs., polymers with acrylic acid esters 1709-72-4D, polymers with acrylic acid esters 1863-63-4, Ammonium benzoate 3385-41-9, Di-ammonium adipate 4986-89-4D, C1-5-alkyl derivs., polymers with acrylic acid esters 4986-89-4D, polymers with acrylic acid esters 9041-78-5D, polymers with C1-5-alkylacrylates and methacrylate diesters 10095-20-2D, C1-5-alkyl derivs. polymers with acrylic acid esters and polyethylene glycol dimethacrylates 25233-34-5, Polythiophene 25852-47-5D, polymers with propanetriol C1-5-alkylacrylates 27522-09-4, Ammonium borate 30604-81-0, Polypyrrole 37281-56-4 38719-13-0 45314-30-5D, copolymers with propanetriol acrylates and phosphonoethylene glycol C1-5-alkylacrylates 51877-43-1, Ammonium sebacate 67037-15-4, uses 79723-02-7, uses 82169-85-5, Ammonium azelate 94108-97-1D, C1-5-alkyl derivs., polymers with propanetriol acrylates and propanetriol C1-5-alkylacrylates 94108-97-1D, polymers with propanetriol C1-5-alkylacrylates 114480-39-6 120226-84-8, uses 126213-51-2, Polyethylenedioxythiophene 129710-09-4, uses 167552-54-7, uses 183386-04-1 220208-63-9 485828-99-7 753028-70-5 753028-71-6 753028-72-7 753028-73-8 753028-74-9 **753451-52-4** 753451-57-9  
    RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
        (polymer electrolyte of solid electrolytic capacitor)
- IT 25233-30-1, Polyaniline  
    RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
        (sulfonated; **polymer electrolyte of solid electrolytic capacitor**)
- IT **753451-52-4**  
    RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(polymer electrolyte of solid electrolytic capacitor)

RN 753451-52-4 HCAPLUS

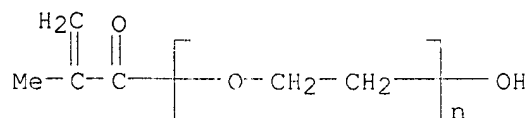
CN Oxirane, ethyl-, polymer with oxirane, bis(2-methylenepentanoate), polymer with  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -hydroxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 25736-86-1

CMF (C2 H4 O)<sub>n</sub> C4 H6 O2

CCI PMS



CM 2

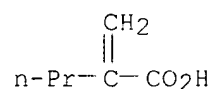
CRN 753451-51-3

CMF C6 H10 O2 . 1/2 (C4 H8 O . C2 H4 O)<sub>x</sub>

CM 3

CRN 5650-75-9

CMF C6 H10 O2



CM 4

CRN 27517-34-6

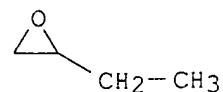
CMF (C4 H8 O . C2 H4 O)<sub>x</sub>

CCI PMS

CM 5

CRN 106-88-7

CMF C4 H8 O



CM 6

CRN 75-21-8

CMF C2 H4 O



L189 ANSWER 2 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:317760 HCAPLUS

DN 138:341090

TI **Polymer gel electrolyte** composition and its manufacture

IN Maruyama, Kunio; Miyagawa, Shinji; Yamaguchi, Shuichiro; Koyama, Noboru  
PA Shirouma Science Co., Ltd., Japan; Fuji Heavy Industries Ltd.; Chemipro Kasei Ltd.; Mitsui and Co., Ltd.

SO Jpn. Kokai Tokkyo Koho, 16 pp.  
CODEN: JKXXAF

DT **Patent**

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003123842	A	20030425	JP 2001-322319	20011019 <--
	JP 3974371	B2	20070912		
	WO 2003036656	A1	20030501	WO 2002-JP10746	20021016 <--
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW:				
	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	AU 2002363048	A1	20030506	AU 2002-363048	20021016 <--
	TW 593498	B	20040621	TW 2002-91124118	20021018 <--
	US 20040197662	A1	20041007	US 2004-828468	20040419 <--
	US 7285360	B2	20071023		
PRAI	JP 2001-322319	A	20011019	<--	
	WO 2002-JP10746	W	20021016	<--	

AB The **electrolyte** composition, useful for electrochem. devices, has a 3-dimensional crosslinked structure of a crosslinked polymer network matrix in a mixed nonaq. solvent **electrolyte** solution, and a non-crosslinked polymer contained in the matrix; where the non-crosslinked polymer contains an ethylene unit and/or an propylene unit, and an unsatd. carboxylic acid obtained by esterizing a carboxyl group with a polyalkylene glycol protected by a hydroxyl group at its one end. The **electrolyte** composition is manufactured by dissolving the non-crosslinked polymer in the mixed nonaq. solvent **electrolyte** solution, adding a crosslinkable monomer to the mixture; and polymerizing the monomer with the mixture

IC ICM H01M0010-40

ICS C08G0081-02; C08L0023-26; C08L0101-02; H01B0001-06; H01G0009-025; H01G0009-032

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST **battery polymer gel electrolyte** compn manuf

IT **Battery electrolytes**
**Polymer electrolytes**

(compns. and manufacture of **polymer gel electrolytes** for

electrochem. devices)

IT 518044-75-2P, Acrylic acid-ethylene copolymer, ester with polyethylene glycol monomethyl ether, polymer with polyethylene glycol diacrylate 518044-77-4P, Ethylene-methacrylic acid copolymer, ester with ethylene glycol monoethyl ether, polymer with polyethylene glycol diacrylate 518044-79-6P, Acrylic acid-ethylene copolymer, ester with ethylene glycol monomethyl ether, polymer with N-methylol methacrylamide 518044-81-0P, Ethylene-methacrylic acid copolymer, ester with ethylene glycol monoethyl ether, polymer with 3-hydroxyethyl methacrylate 518044-82-1P, Acrylic acid-ethylene copolymer, ester with ethylene glycol monomethyl ether, polymer with glycidyl acrylate 518044-83-2P, Acrylic acid-ethylene copolymer, ester with ethylene glycol monomethyl ether, polymer with 4,4'-diphenyl diisocyanate 518044-84-3P, Acrylic acid-ethylene copolymer, ester with ethylene glycol monomethyl ether, polymer with triphenyl methane triisocyanate 518044-86-5P, Ethylene-methacrylic acid-propylene copolymer, ester with ethylene glycol monomethyl ether, polymer with polyethylene glycol diacrylate  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (compsns. and manufacture of **polymer gel electrolytes** for electrochem. devices)

IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 111-46-6, Diethylene glycol, uses 616-38-6, Dimethyl carbonate 623-53-0, Methyl ethyl carbonate 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 518044-78-5, Acrylic acid-ethylene copolymer, ester with ethylene glycol monomethyl ether, polymer with 1,6-hexanediol dimethacrylate  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (compsns. and manufacture of **polymer gel electrolytes** for electrochem. devices)

IT 518044-75-2P, Acrylic acid-ethylene copolymer, ester with polyethylene glycol monomethyl ether, polymer with polyethylene glycol diacrylate 518044-77-4P, Ethylene-methacrylic acid copolymer, ester with ethylene glycol monoethyl ether, polymer with polyethylene glycol diacrylate 518044-81-0P, Ethylene-methacrylic acid copolymer, ester with ethylene glycol monoethyl ether, polymer with 3-hydroxyethyl methacrylate 518044-86-5P, Ethylene-methacrylic acid-propylene copolymer, ester with ethylene glycol monomethyl ether, polymer with polyethylene glycol diacrylate  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (compsns. and manufacture of **polymer gel electrolytes** for electrochem. devices)

RN 518044-75-2 HCAPLUS

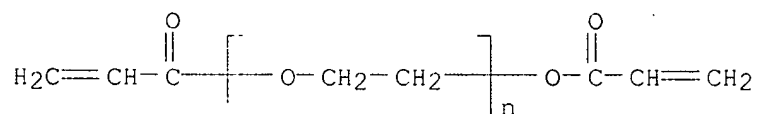
CN 2-Propenoic acid, polymer with ethene, ester with  $\alpha$ -methyl- $\omega$ -hydroxypoly(oxy-1,2-ethanediyl), graft, polymer with  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -[(1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl) (9CI)  
 (CA INDEX NAME)

CM 1

CRN 26570-48-9

CMF (C2 H4 O)<sub>n</sub> C6 H6 O3

CCI PMS



CM 2

CRN 177569-35-6

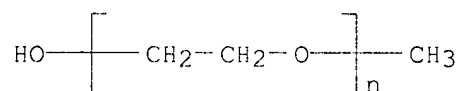
CMF (C3 H4 O2 . C2 H4)x . x (C2 H4 O)n C H4 O

CM 3

CRN 9004-74-4

CMF (C2 H4 O)n C H4 O

CCI PMS



CM 4

CRN 9010-77-9

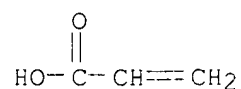
CMF (C3 H4 O2 . C2 H4)x

CCI PMS

CM 5

CRN 79-10-7

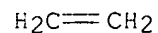
CMF C3 H4 O2



CM 6

CRN 74-85-1

CMF C2 H4

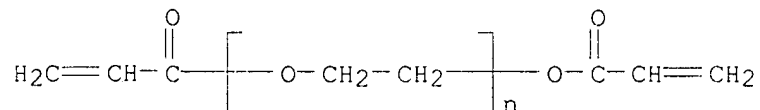


RN 518044-77-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with ethene, ester with  
 α-methyl-ω-hydroxypoly(oxy-1,2-ethanediyl), graft, polymer  
 with α-(1-oxo-2-propenyl)-ω-[(1-oxo-2-propenyl)oxy]poly(oxy-  
 1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 26570-48-9  
CMF (C2 H4 O)n C6 H6 O3  
CCI PMS

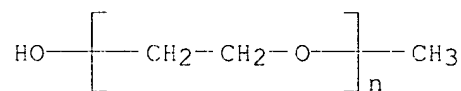


CM 2

CRN 518044-76-3  
CMF (C4 H6 O2 . C2 H4)x . x (C2 H4 O)n C H4 O

CM 3

CRN 9004-74-4  
CMF (C2 H4 O)n C H4 O  
CCI PMS

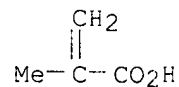


CM 4

CRN 25053-53-6  
CMF (C4 H6 O2 . C2 H4)x  
CCI PMS

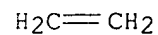
CM 5

CRN 79-41-4  
CMF C4 H6 O2



CM 6

CRN 74-85-1  
CMF C2 H4



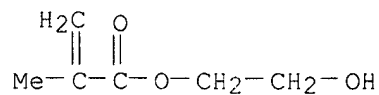
RN 518044-81-0 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, polymer with ethene, ester with

16 april 2008

$\alpha$ -methyl- $\omega$ -hydroxypoly(oxy-1,2-ethanediyl), graft, polymer  
with 2-hydroxyethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 868-77-9  
CMF C6 H10 O3

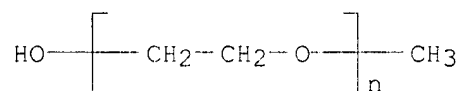


CM 2

CRN 518044-76-3  
CMF (C4 H6 O2 . C2 H4)x . x (C2 H4 O)n C H4 O

CM 3

CRN 9004-74-4  
CMF (C2 H4 O)n C H4 O  
CCI PMS

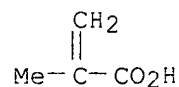


CM 4

CRN 25053-53-6  
CMF (C4 H6 O2 . C2 H4)x  
CCI PMS

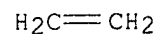
CM 5

CRN 79-41-4  
CMF C4 H6 O2



CM 6

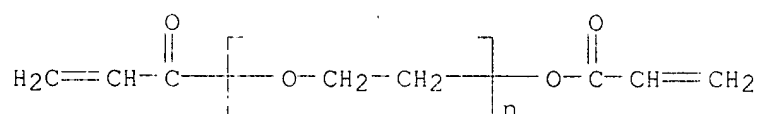
CRN 74-85-1  
CMF C2 H4



RN 518044-86-5 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, polymer with ethene and propene, ester with  
 α-methyl-ω-hydroxypoly(oxy-1,2-ethanediyl), graft, polymer  
 with α-(1-oxo-2-propenyl)-ω-[(1-oxo-2-propenyl)oxy]poly(oxy-  
 1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 26570-48-9  
 CMF (C2 H4 O)<sub>n</sub> C6 H6 O3  
 CCI PMS

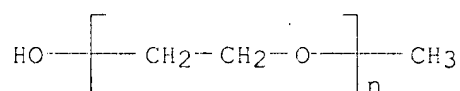


CM 2

CRN 518044-85-4  
 CMF (C4 H6 O2 . C3 H6 . C2 H4)<sub>x</sub> . x (C2 H4 O)<sub>n</sub> C H4 O

CM 3

CRN 9004-74-4  
 CMF (C2 H4 O)<sub>n</sub> C H4 O  
 CCI PMS

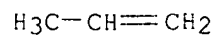


CM 4

CRN 28433-68-3  
 CMF (C4 H6 O2 . C3 H6 . C2 H4)<sub>x</sub>  
 CCI PMS

CM 5

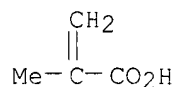
CRN 115-07-1  
 CMF C3 H6



CM 6

CRN 79-41-4  
 CMF C4 H6 O2





CM 7

CRN 74-85-1

CMF C2 H4



IT 518044-78-5, Acrylic acid-ethylene copolymer, ester with ethylene glycol monomethyl ether, polymer with 1,6-hexanediol dimethacrylate  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (compsn. and manufacture of **polymer gel electrolytes** for electrochem. devices)

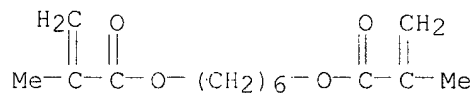
RN 518044-78-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,6-hexanediyl ester, polymer with ethene graft polymer with 2-propenoic acid ester with  $\alpha$ -methyl- $\omega$ -hydroxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 6606-59-3

CMF C14 H22 O4



CM 2

CRN 177569-35-6

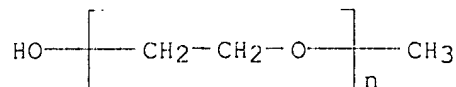
CMF (C3 H4 O2 . C2 H4)x . x (C2 H4 O)n C H4 O

CM 3

CRN 9004-74-4

CMF (C2 H4 O)n C H4 O

CCI PMS



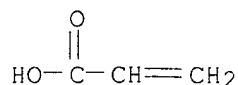
CM 4

CRN 9010-77-9

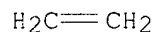
CMF (C3 H4 O2 . C2 H4)x

CCI PMS

CM 5

CRN 79-10-7  
CMF C3 H4 O2

CM 6

CRN 74-85-1  
CMF C2 H4

L189 ANSWER 3 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:260029 HCAPLUS

DN 138:274071

TI Hydrophilic gel-containing separator for **battery** and capacitor  
and its manufacture

IN Fukuda, Takeshi; Mimura, Yoshio

PA Toyo Rubber Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT **Patent**

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003100277	A	20030404	JP 2001-286551	20010920 <--
PRAI	JP 2001-286551		20010920	<--	

AB The separator has a porous substrate supporting hydrophilic gels and is manufactured by polymerizing hydrophilic monomers [e.g., (meth)acrylic acid, (meth)acrylate salt, polyoxylalkylene polyol poly(meth)acrylate], mixing the resulting polymers with solvents to give a hydrophilic gel dispersion, coating and impregnating a porous substrate with the dispersion, and drying the substrate. The separator prevents leakage of **electrolytic** solns.

IC ICM H01M0002-16

ICS C08F0220-06; H01G0009-00; H01G0009-02; H01G0009-035; C08F0220-20

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38, 76ST **battery** separator hydrophilic polymer gel porous substrate;  
capacitor separator hydrophilic polymer gel porous substrate

IT Polyoxylalkylenes, uses

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(acrylic, gel; hydrophilic gel-containing separator for **battery**  
and capacitor and its manufacture for leakage prevention)IT **Primary battery separators****Secondary battery separators**  
Separators

16 april 2008

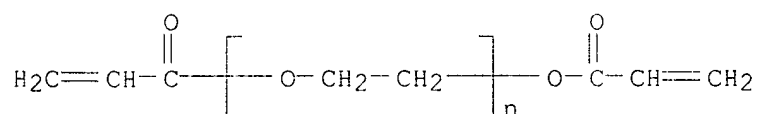
- (hydrophilic gel-containing separator for **battery** and capacitor and its manufacture for leakage prevention)
- IT Paper  
(kraft, separator substrate; hydrophilic gel-containing separator for **battery** and capacitor and its manufacture for leakage prevention)
- IT Nonwoven fabrics  
(separator substrate, WPSD 40C100; hydrophilic gel-containing separator for **battery** and capacitor and its manufacture for leakage prevention)
- IT **Electrolytic capacitors**  
(separators; hydrophilic gel-containing separator for **battery** and capacitor and its manufacture for leakage prevention)
- IT **86417-17-6P**, Acrylic acid-polyethylene glycol diacrylate-potassium acrylate copolymer 503026-74-2P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(gel; hydrophilic gel-containing separator for **battery** and capacitor and its manufacture for leakage prevention)
- IT **86417-17-6P**, Acrylic acid-polyethylene glycol diacrylate-potassium acrylate copolymer  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(gel; hydrophilic gel-containing separator for **battery** and capacitor and its manufacture for leakage prevention)
- RN 86417-17-6 HCAPLUS
- CN 2-Propenoic acid, polymer with  $\alpha$ -(1-oxo-2-propen-1-yl)- $\omega$ -[(1-oxo-2-propen-1-yl)oxy]poly(oxy-1,2-ethanediyl) and potassium 2-propenoate (1:1) (CA INDEX NAME)

CM 1

CRN 26570-48-9

CMF (C2 H4 O)<sub>n</sub> C6 H6 O3

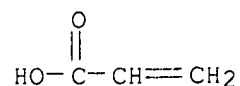
CCI PMS



CM 2

CRN 10192-85-5

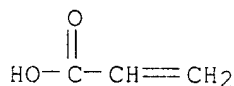
CMF C3 H4 O2 . K



● K

CM 3

CRN 79-10-7  
CMF C3 H4 O2



L189 ANSWER 4 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2003:211267 HCAPLUS  
 DN 138:404166  
 TI Single-ion block **copolymer electrolytes** for  
 solid-state lithium rechargeable **batteries**  
 AU Ryu, Sang-Woog; Trapa, Patrick E.; Sadoway, Donald R.; Mayes, Anne M.  
 CS Department of Materials Science and Engineering, Massachusetts Institute  
 of Technology, Cambridge, MA, 02139, USA  
 SO Polymer Preprints (American Chemical Society, Division of Polymer  
 Chemistry) (2003), 44(1), 1087-1088  
 CODEN: ACPPAY; ISSN: 0032-3934  
 PB American Chemical Society, Division of Polymer Chemistry  
 DT Journal; (computer optical disk)  
 LA English  
 AB Solid **polymer electrolytes** based on lithium  
 salt-solvating poly(ethylene oxide), PEO, are favored candidates for  
 rechargeable lithium **batteries**. The low T, poly(oligo  
 oxyethylene methacrylate), POEM, results in the creation of nanoscale liquid  
 pathways for lithium ion **conduction**. A series of block  
 copolymers consisting of POEM, poly(lithium methacrylate), PLiMA, and  
 poly(lauryl methacrylate), PLMA, were synthesized to investigate how mol.  
 architecture, and particularly the block placement of the anions,  
 influences **conductivity** in self-doped block **copolymer**  
**electrolytes**. The ionic **conductivity** in nearly 2 orders of  
 magnitude higher when the LiMA is confined to a rubbery, alkyl ester block  
 (random copolymer segment with lauryl methacrylate) or as a central homo  
 polymeric block compared to when it is in a copolymeric block with the  
 POEM.  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 35, 38  
 ST ion **cond block copolymer polyelectrolyte**  
 solid lithium rechargeable **battery**  
 IT Polymerization  
 (anionic, living; single-ion block **copolymer**  
**electrolytes** for solid-state lithium rechargeable  
**batteries**)  
 IT **Secondary batteries**  
 (lithium; single-ion block **copolymer electrolytes**  
 for solid-state lithium rechargeable **batteries**)  
 IT Hydrolysis  
 (of tert- Bu ester groups to carboxylic acids; single-ion block  
**copolymer electrolytes** for solid-state lithium  
 rechargeable **batteries**)  
 IT **Battery electrolytes**  
 Ionic **conductivity**  
 (single-ion block **copolymer electrolytes** for  
 solid-state lithium rechargeable **batteries**)  
 IT 75-77-4, reactions 7681-82-5, Sodium iodide, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (for hydrolysis; single-ion block **copolymer**

**electrolytes for solid-state lithium rechargeable batteries)**

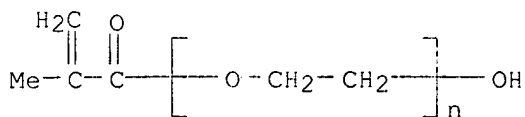
- IT 865-34-9, Lithium methoxide  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (form lithium salt of the pre-hydrolyzed tert-Bu ester groups;  
 single-ion block **copolymer electrolytes** for  
 solid-state lithium rechargeable **batteries**)
- IT 598-30-1, sec-Butyllithium 3462-81-5, 1,1-Diphenylhexyllithium  
 7447-41-8, Lithium chloride (LiCl), uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (single-ion block **copolymer electrolytes** for  
 solid-state lithium rechargeable **batteries**)
- IT 25719-52-2P, Poly(lauryl methacrylate) 528875-84-5P, Lauryl  
 methacrylate-tert-butyl methacrylate block copolymer 528875-86-7P,  
 Lauryl methacrylate-tert-butyl methacrylate-poly(oligo oxyethylene)  
 methacrylate block copolymer  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (single-ion block **copolymer electrolytes** for  
 solid-state lithium rechargeable **batteries**)
- IT **374591-39-6P**  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (single-ion block **copolymer electrolytes** for  
 solid-state lithium rechargeable **batteries**)
- IT 142-90-5, Lauryl methacrylate 585-07-9, tert-Butyl methacrylate  
 87105-87-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (single-ion block **copolymer electrolytes** for  
 solid-state lithium rechargeable **batteries**)
- IT **374591-39-6P**  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (single-ion block **copolymer electrolytes** for  
 solid-state lithium rechargeable **batteries**)
- RN 374591-39-6 HCAPLUS
- CN 2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with lithium  
 2-methyl-2-propenoate and  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -  
 hydroxypoly(oxy-1,2-ethanediyl), block (9CI) (CA INDEX NAME)

CM 1

CRN 25736-86-1

CMF (C2 H4 O)<sub>n</sub> C4 H6 O2

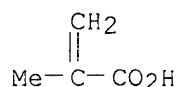
CCI PMS



CM 2

CRN 13234-23-6

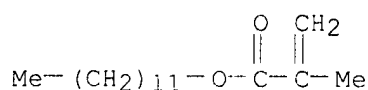
CMF C4 H6 O2 . Li



● Li

CM 3

CRN 142-90-5  
CMF C16 H30 O2



RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L189 ANSWER 5 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:256668 HCAPLUS

DN 136:297384

TI Secondary lithium **battery**

IN Sada, Tsutomu; Takeda, Kazunari; Yokota, Yumiko; Nishimura, Naoto; Mitate, Takehito; Yamada, Kazuo; Nishijima, Motoaki; Torata, Naoto

PA Pionics Co., Ltd., Japan; Sharp Corp.

SO PCT Int. Appl., 23 pp.

CODEN: PIXXD2

DT **Patent**

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002027858	A1	20020404	WO 2001-JP8526	20010928 <--
	W: CN, IN, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	JP 2002110244	A	20020412	JP 2000-297772	20000929 <--
	TW 518795	B	20030121	TW 2001-90123997	20010927 <--
	KR 772566	B1	20071102	KR 2003-704253	20030324 <--
	US 20040029009	A1	20040212	US 2003-381515	20030812 <--
PRAI	JP 2000-297772	A	20000929	<--	
	WO 2001-JP8526	W	20010928	<--	

AB The **battery** has a Li intercalating anode, a Li containing chalcogenide cathode, and a solid **electrolyte** between and bonded to the electrodes; where the **electrolyte** has lower d.c. resistance on the cathode side than the anode side. The solid **electrolyte** is preferably a **polymer electrolyte**, with a higher Li salt concentration and /or a higher Li salt solution content on the cathode side than the anode side.

IC ICM H01M0010-40

ICS H01M0004-58; H01M0004-02

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary battery polymer electrolyte  
lithium salt distribution; resistance grade polymer  
electrolyte secondary lithium battery

IT Battery electrolytes  
(polymer electrolytes with lower d.c. resistance on  
cathode side than anode side in secondary lithium batteries)

IT 96-48-0,  $\gamma$ -Butyrolactone 96-49-1, Ethylene carbonate 108-32-7,  
Propylene carbonate 14283-07-9, Lithium fluoroborate 21324-40-3,  
Lithium hexafluorophosphate 258327-46-7 406720-90-9  
406909-87-3  
RL: DEV (Device component use); USES (Uses)  
(polymer electrolytes with lower d.c. resistance on  
cathode side than anode side in secondary lithium batteries)

IT 406720-90-9 406909-87-3  
RL: DEV (Device component use); USES (Uses)  
(polymer electrolytes with lower d.c. resistance on  
cathode side than anode side in secondary lithium batteries)

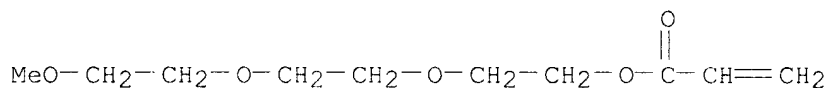
RN 406720-90-9 HCAPLUS

CN 2-Propenoic acid, 2-[2-(2-methoxyethoxy)ethoxy]ethyl ester, polymer with  
methyloxirane polymer with oxirane ether with 1,2,3-propanetriol (3:1)  
tri-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 48067-72-7

CMF C10 H18 O5



CM 2

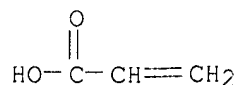
CRN 111804-95-6

CMF C3 H8 O3 . 3 (C3 H6 O . C2 H4 O)x . 3 C3 H4 O2

CM 3

CRN 79-10-7

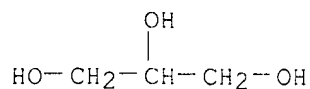
CMF C3 H4 O2



CM 4

CRN 56-81-5

CMF C3 H8 O3



CM 5

CRN 9003-11-6

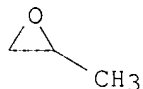
CMF (C3 H6 O . C2 H4 O)x

CCI PMS

CM 6

CRN 75-56-9

CMF C3 H6 O



CM 7

CRN 75-21-8

CMF C2 H4 O



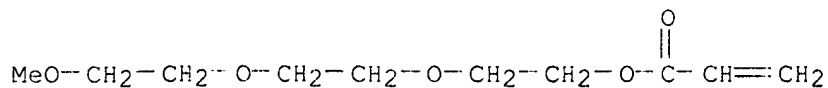
RN 406909-87-3 HCAPLUS

CN 2-Propenoic acid, 2-[2-(2-methoxyethoxy)ethoxy]ethyl ester, polymer with methyloxirane polymer with oxirane mono-2-propenoate methyl ether (9CI)  
(CA INDEX NAME)

CM 1

CRN 48067-72-7

CMF C10 H18 O5



CM 2

CRN 52108-83-5

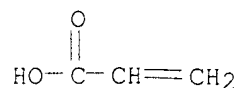
CMF (C3 H6 O . C2 H4 O)x . C3 H4 O2 . C H4 O

CM 3

CRN 79-10-7



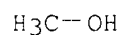
CMF C3 H4 O2



CM 4

CRN 67-56-1

CMF C H4 O



CM 5

CRN 9003-11-6

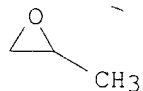
CMF (C3 H6 O . C2 H4 O)x

CCI PMS

CM 6

CRN 75-56-9

CMF C3 H6 O



CM 7

CRN 75-21-8

CMF C2 H4 O



RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L189 ANSWER 6 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:256667 HCAPLUS

DN 136:281999

TI Manufacture of secondary lithium **battery**

IN Sada, Tsutomu; Takeda, Kazunari; Yokota, Yumiko; Nishimura, Naoto; Mitate, Takehito; Yamada, Kazuo; Nishijima, Motoaki; Torata, Naoto

PA Pionics Co., Ltd., Japan; Sharp Corp.

SO PCT Int. Appl., 30 pp.

CODEN: PIXXD2

DT **Patent**

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002027857	A1	20020404	WO 2001-JP8525	20010928 <--
	W: CN, IN, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	JP 2002110147	A	20020412	JP 2000-297771	20000929 <--
	TW 518789	B	20030121	TW 2001-90123996	20010927 <--
PRAI	JP 2000-297771	A	20000929	<--	

AB The **battery** is manufactured by preparing a Li intercalating carbonaceous anode and a Li containing chalcogenide cathode, impregnating the electrodes with a 1st mixture of an ion **conducting** polymer precursor and a nonaq. **electrolyte** solution, applying a 2nd nonaq. **electrolyte** solution mixture having a higher polymer precursor concentration on the impregnated electrodes, and polymerizing the precursors on the electrode to form **polymer electrolyte** layers bonded on the electrodes.

IC ICM H01M0010-40

ICS H01M0004-02; H01M0004-58

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary lithium **battery polymer electrolyte**  
manuf; electrode bonded **polymer electrolyte** manuf  
lithium **battery**

 IT **Battery electrolytes**

(manufacture of secondary lithium **batteries** with electrode bonded  
**polymer electrolyte** layers)

IT 258327-46-7P 406720-90-9P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
(Preparation); USES (Uses)

(manufacture of secondary lithium **batteries** with electrode bonded  
**polymer electrolyte** layers)

IT 96-48-0,  $\gamma$ -Butyrolactone 108-32-7, Propylene carbonate 623-53-0,  
Ethyl methyl carbonate 14283-07-9, Lithium fluoroborate

RL: DEV (Device component use); PEP (Physical, engineering or chemical  
process); PYP (Physical process); PROC (Process); USES (Uses)

(manufacture of secondary lithium **batteries** with electrode bonded  
**polymer electrolyte** layers)

IT 406720-90-9P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
(Preparation); USES (Uses)

(manufacture of secondary lithium **batteries** with electrode bonded  
**polymer electrolyte** layers)

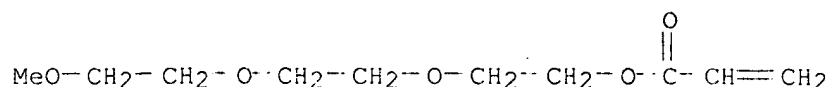
RN 406720-90-9 HCAPLUS

CN 2-Propenoic acid, 2-[2-(2-methoxyethoxy)ethoxy]ethyl ester, polymer with  
methyloxirane polymer with oxirane ether with 1,2,3-propanetriol (3:1)  
tri-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 48067-72-7

CMF C10 H18 O5



CM 2

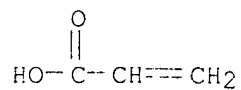
CRN 111804-95-6

CMF C3 H8 O3 . 3 (C3 H6 O . C2 H4 O)x . 3 C3 H4 O2

CM 3

CRN 79-10-7

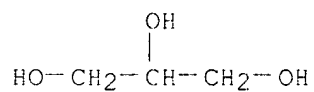
CMF C3 H4 O2



CM 4

CRN 56-81-5

CMF C3 H8 O3



CM 5

CRN 9003-11-6

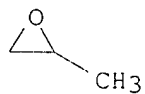
CMF (C3 H6 O . C2 H4 O)x

CCI PMS

CM 6

CRN 75-56-9

CMF C3 H6 O



CM 7

CRN 75-21-8

CMF C2 H4 O



RE.CNT 5

THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

16 april 2008

L189 ANSWER 7 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:256665 HCAPLUS

DN 136:281997

TI Secondary **polymer electrolyte** lithium **battery**

IN Sada, Tsutomu; Takeda, Kazunari; Yokota, Yumiko; Nishimura, Naoto; Mitate, Takehito; Yamada, Kazuo; Nishijima, Motoaki; Torata, Naoto

PA Sharp Corp., Japan

SO PCT Int. Appl., 26 pp.

CODEN: PIXXD2

DT **Patent**

LA Japanese

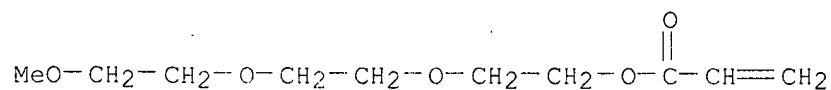
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002027855	A1	20020404	WO 2001-JP8523	20010928 <--
	W: CN, IN, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	JP 2002110242	A	20020412	JP 2000-297762	20000929 <--
	TW 518794	B	20030121	TW 2001-90123994	20010927 <--
	KR 772563	B1	20071102	KR 2003-703923	20030318 <--
	US 20040048159	A1	20040311	US 2003-381885	20030903 <--
	US 7192675	B2	20070320		
PRAI	JP 2000-297762	A	20000929 <--		
	WO 2001-JP8523	W	20010928 <--		
AB	The <b>battery</b> has a Li intercalating carbonaceous anode, a Li containing chalcogenide cathode, and a <b>polymer electrolyte</b> between the electrodes; where the <b>electrolyte</b> has an anode side layer and a cathode side layer bonded to resp. electrodes, and the 2 layers have different viscoelasticity.				
IC	ICM H01M0010-40				
	ICS H01M0004-58; H01M0004-02				
CC	52-2 (Electrochemical, Radiational, and Thermal Energy Technology)				
ST	secondary lithium <b>battery polymer electrolyte</b> viscoelasticity				
IT	<b>Battery electrolytes</b>				
	Viscoelasticity				
	(polymer electrolyte layers with different viscoelasticity bonded on cathodes and anodes in secondary lithium batteries)				
IT	96-48-0, $\gamma$ -Butyrolactone	96-49-1, Ethylene carbonate	108-32-7, Propylene carbonate	14283-07-9, Lithium fluoroborate	258327-46-7
	406720-90-9				
	RL: DEV (Device component use); USES (Uses)				
	(polymer electrolyte layers with different viscoelasticity bonded on cathodes and anodes in secondary lithium batteries)				
IT	406720-90-9				
	RL: DEV (Device component use); USES (Uses)				
	(polymer electrolyte layers with different viscoelasticity bonded on cathodes and anodes in secondary lithium batteries)				
RN	406720-90-9 HCAPLUS				
CN	2-Propenoic acid, 2-[2-(2-methoxyethoxy)ethoxy]ethyl ester, polymer with methyloxirane polymer with oxirane ether with 1,2,3-propanetriol (3:1) tri-2-propenoate (9CI) (CA INDEX NAME)				

CM 1

16 april 2008

CRN 48067-72-7  
CMF C10 H18 O5

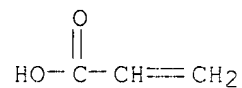


CM 2

CRN 111804-95-6  
CMF C3 H8 O3 . 3 (C3 H6 O . C2 H4 O)x . 3 C3 H4 O2

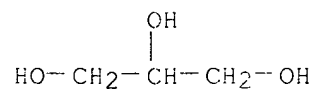
CM 3

CRN 79-10-7  
CMF C3 H4 O2



CM 4

CRN 56-81-5  
CMF C3 H8 O3

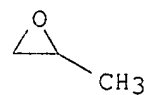


CM 5

CRN 9003-11-6  
CMF (C3 H6 O . C2 H4 O)x  
CCI PMS

CM 6

CRN 75-56-9  
CMF C3 H6 O



CM 7

CRN 75-21-8

CMF C2 H4 O



RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L189 ANSWER 8 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2001:796627 HCAPLUS

DN 135:346885

TI Manufacture of **polymer solid electrolytes** and  
**polymer batteries**

IN Mori, Tetsu; Yokojima, Minoru

PA Nippon Kayaku Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT **Patent**

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001307776	A	20011102	JP 2000-119182	20000420 <--
PRAI	JP 2000-119182		20000420 <--		

AB The **polymer electrolytes** are prepared by mixing a plasticizer, an **electrolyte**, and thermal **polymerization** initiator with  $\geq 2$  of (meth)acrylic group containing polymers, oligomers, and monomers and hardening the mixture; where the hardening temperature

is controlled above a temperature, where the initiator has a half life of 10 h.

IC ICM H01M0010-40

ICS C08F0290-00; C08J0005-18; C08K0003-10; C08K0005-00; C08K0005-17;  
C08K0005-50; C08L0101-06

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST **battery acrylic polymer electrolyte** manuf  
temp control

IT **Battery electrolytes**

(temperature control in manufacture of **polymer solid electrolytes** with thermal **polymerization** initiator for **polymer batteries**)

IT 108-32-7P, Propylene carbonate 7791-03-9P, Lithium perchlorate 28961-43-5P 139948-72-4P, Kayarad UX 3301 371970-53-5P 371970-54-6P

RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)

(temperature control in manufacture of **polymer solid electrolytes** with thermal **polymerization** initiator for **polymer batteries**)

IT 94-36-0, Cadex b-ch50, uses

RL: NUU (Other use, unclassified); USES (Uses)

(temperature control in manufacture of **polymer solid electrolytes** with thermal **polymerization** initiator for **polymer batteries**)

IT 371970-53-5P

RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)

(temperature control in manufacture of **polymer** solid  
**electrolytes** with thermal **polymerization** initiator for  
polymer **batteries**)

RN 371970-53-5 HCAPLUS

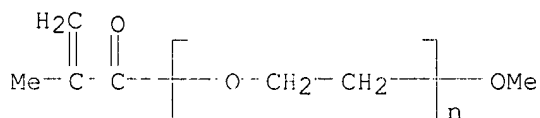
CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with  
 $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-  
ethanediyl) and 2-propenoic acid (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

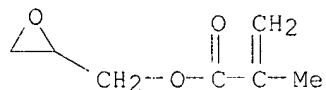
CCI PMS



CM 2

CRN 106-91-2

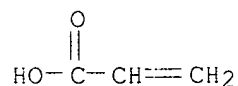
CMF C7 H10 O3



CM 3

CRN 79-10-7

CMF C3 H4 O2



L189 ANSWER 9 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2001:561055 HCAPLUS

DN 135:374044

TI Using block copolymers in nanostructured architectures in lithium  
**batteries**

AU Mayes, Anne M.; Sadoway, Donald R.

CS Department of Materials Science and Engineering, Massachusetts Institute  
of Technology, Cambridge, MA, 02139-4307, USA

SO Proceedings - Electrochemical Society (2001),  
2000-36(Interfaces, Phenomena, and Nanostructures in Lithium Batteries),  
153-162

CODEN: PESODO; ISSN: 0161-6374

PB Electrochemical Society

DT Journal

LA English  
 AB Block copolymers are highly versatile materials for rechargeable lithium **battery** applications. Nanoscalar, periodic variation in composition is what endows these materials with their remarkable properties. As **electrolytes**, rubbery (low  $\eta$ ) block copolymers consisting of a PEO-based poly[oligo(oxyethylene) methacrylate] (POEM) block doped with lithium triflate and a poly(lauryl methacrylate) (PLMA) block have demonstrated high ionic **conductivity** while retaining dimensional stability. These same block copolymers have been used as templates for the synthesis of nanocomposite electrodes capable of delivering very high currents. Anodes comprising carbon nanotubes connected to a dispersion of metal nanoparticles, all self-assembled within the POEM phase of the POEM - b - PMMA diblock copolymer have been characterized in coin-cell **battery** test configurations. In charge/discharge tests over hundreds of cycles at rates as high as 4 C these electrodes exhibited high resistance to capacity fade.

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 38

ST lithium **battery electrolyte** electrode block **copolymer**

IT Polymers, uses  
 RL: DEV (Device component use); USES (Uses)  
 (block; using block copolymers in nanostructured architectures in lithium **batteries**)

IT **Secondary batteries**  
 (lithium; using block copolymers in nanostructured architectures in lithium **batteries**)

IT **Battery electrolytes**  
**Polymer electrolytes**  
 (self-doped block **copolymer electrolytes**; using block **copolymers** in nanostructured architectures in lithium **batteries**)

IT **Battery anodes**  
**Battery electrodes**  
**Ionic conductivity**  
 (using block copolymers in nanostructured architectures in lithium **batteries**)

IT 79-41-4D, Methacrylic acid, alkyl esters, polymers with polyethylene glycol methacrylate, block 24991-55-7, Polyethylene glycol dimethyl ether 72892-39-8 211621-80-6 **374591-39-6**  
 RL: DEV (Device component use); USES (Uses)  
 (using block copolymers in nanostructured architectures in lithium **batteries**)

IT **374591-39-6**  
 RL: DEV (Device component use); USES (Uses)  
 (using block copolymers in nanostructured architectures in lithium **batteries**)

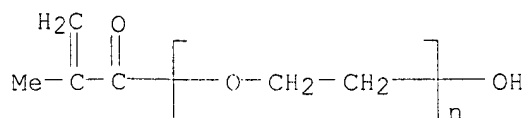
RN 374591-39-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with lithium 2-methyl-2-propenoate and  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -hydroxypoly(oxy-1,2-ethanediyl), block (9CI) (CA INDEX NAME)

CM 1

CRN 25736-86-1  
 CMF (C2 H4 O)<sub>n</sub> C4 H6 O2  
 CCI PMS

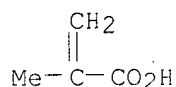




CM 2

CRN 13234-23-6

CMF C4 H6 O2 . Li

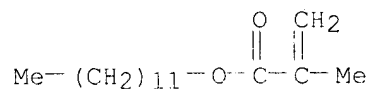


• Li

CM 3

CRN 142-90-5

CMF C16 H30 O2



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L189 ANSWER 10 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2000:49109 HCAPLUS

DN 132:110582

 TI Nonaqueous secondary **batteries**

IN Tomiyama, Hideki

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 21 pp.

CODEN: JKXXAF

 DT **Patent**

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000021449	A	20000121	JP 1998-186328	19980701 <--
	JP 4003298	B2	20071107		
PRAI	JP 1998-186328		19980701	<--	

AB The **batteries** comprise a Li-containing transition metal oxide cathode, a Li-intercalating Si-containing anode, and a **electrolyte** gel containing (a) organic polymer, (b) non-protonic solvent, and (c) ammonium, alkali metal, or alkaline earth metal salt. The **batteries** have excellent charge-discharge cycle characteristics.

IC ICM H01M0010-40

16 april 2008

ICS H01M0010-40; H01M0004-02; H01M0004-58  
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38  
ST nonaq secondary **battery gel electrolyte**; oxyalkylene  
vinyl **polymer gel electrolyte battery**  
IT Gels  
( **electrolyte**; lithium secondary **batteries** with  
**polymer gel electrolytes**)  
IT **Battery electrolytes**  
**Polymer electrolytes**  
**Secondary batteries**  
(lithium secondary **batteries** with **polymer gel**  
**electrolytes**)  
IT Fluoropolymers, uses  
Polyoxyalkylenes, uses  
RL: DEV (Device component use); USES (Uses)  
(lithium secondary **batteries** with **polymer gel**  
**electrolytes**)  
IT Polyphosphazenes  
Polyphosphazenes  
Polysiloxanes, uses  
Polysiloxanes, uses  
RL: DEV (Device component use); USES (Uses)  
(polyoxyalkylene-, graft, lithium complex; lithium secondary  
**batteries** with **polymer gel electrolytes**)  
IT Polyoxyalkylenes, uses  
Polyoxyalkylenes, uses  
RL: DEV (Device component use); USES (Uses)  
(polyphosphazene-, graft, lithium complex; lithium secondary  
**batteries** with **polymer gel electrolytes**)  
IT Polyoxyalkylenes, uses  
Polyoxyalkylenes, uses  
RL: DEV (Device component use); USES (Uses)  
(polysiloxane-, graft, lithium complex; lithium secondary  
**batteries** with **polymer gel electrolytes**)  
IT 7440-02-0, Nickel, uses  
RL: DEV (Device component use); USES (Uses)  
(-coated silicon anode; lithium secondary **batteries** with  
**polymer gel electrolytes**)  
IT 7440-21-3, Silicon, uses 7631-86-9, Silica, uses 193072-79-6  
RL: DEV (Device component use); USES (Uses)  
(anode; lithium secondary **batteries** with **polymer**  
**gel electrolytes**)  
IT 12190-79-3, Cobalt lithium oxide (CoLiO2)  
RL: DEV (Device component use); USES (Uses)  
(cathode; lithium secondary **batteries** with **polymer**  
**gel electrolytes**)  
IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate  
RL: DEV (Device component use); USES (Uses)  
(**electrolyte** solvent; lithium secondary **batteries**  
with **polymer gel electrolytes**)  
IT 21324-40-3, Lithium hexafluorophosphate  
RL: DEV (Device component use); USES (Uses)  
(**electrolyte**; lithium secondary **batteries** with  
**polymer gel electrolytes**)  
IT 9003-11-6, Ethylene oxide-propylene oxide copolymer 9011-17-0  
24937-79-9, Poly(vinylidene fluoride) 24968-79-4, Acrylonitrile-methyl  
acrylate copolymer 25014-41-9, Polyacrylonitrile 25067-61-2,  
Polymethacrylonitrile 25322-68-3 25322-69-4 29613-70-5 50867-60-2,  
Acrylonitrile-methyl vinyl ether copolymer 98973-15-0 115401-75-7

255897-37-1 255897-39-3 255897-40-6 255897-42-8  
255897-44-0 255897-45-1 255897-46-2 255897-47-3 255897-48-4

RL: DEV (Device component use); USES (Uses)  
(lithium secondary **batteries** with **polymer gel electrolytes**)

IT 255897-37-1

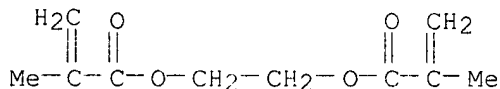
RL: DEV (Device component use); USES (Uses)  
(lithium secondary **batteries** with **polymer gel electrolytes**)

RN 255897-37-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with 1,2-ethanediyl  
bis(2-methyl-2-propenoate) and oxirane (9CI) (CA INDEX NAME)

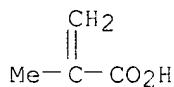
CM 1

CRN 97-90-5  
CMF C10 H14 O4



CM 2

CRN 79-41-4  
CMF C4 H6 O2



CM 3

CRN 75-21-8  
CMF C2 H4 O



L189 ANSWER 11 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1999:421080 HCAPLUS

DN 131:118445

TI Acrylic compositions for manufacture of **polymer solid electrolytes**

IN Hatazawa, Takenobu; Watanabe, Takashi

PA Sekisui Chemical Co. Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

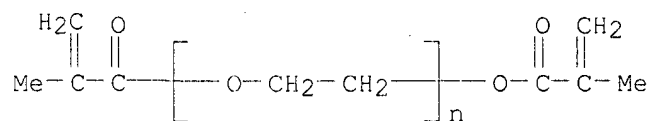
CODEN: JKXXAF

DT **Patent**

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11181208	A	19990706	JP 1997-347993	19971217 <--
PRAI	JP 1997-347993		19971217 <--		
AB	The title compns. comprise acrylic monomers, ion dissociation agents, hardening agents, and Li compds. Resulting solid <b>electrolytes</b> have high ion <b>conductivity</b> and strength and are especially suitable for <b>batteries</b> .				
IC	ICM C08L0033-00 ICS H01M0006-18; H01M0010-40; C08F0002-46				
CC	52-2 (Electrochemical, Radiational, and Thermal Energy Technology) Section cross-reference(s): 38, 76				
ST	acrylic polymer lithium solid <b>electrolyte</b> <b>battery</b>				
IT	<b>Battery electrolytes</b> <b>Polymer electrolytes</b> (acrylic compns. for manufacture of <b>polymer solid electrolytes</b> for lithium <b>batteries</b> )				
IT	<b>Primary batteries</b> (lithium; acrylic compns. for manufacture of <b>polymer solid electrolytes</b> for lithium <b>batteries</b> )				
IT	7439-93-2DP, Lithium, acrylic polymer complexes, uses 233590-27-7DP, lithium complexes 233590-28-8DP, lithium complexes RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic compns. for manufacture of <b>polymer solid electrolytes</b> for lithium <b>batteries</b> )				
IT	14283-07-9, Lithium tetrafluoroborate RL: TEM (Technical or engineered material use); USES (Uses) (acrylic polymer complexes; acrylic compns. for manufacture of <b>polymer solid electrolytes</b> for lithium <b>batteries</b> )				
IT	7473-98-5 RL: MOA (Modifier or additive use); USES (Uses) (hardening agents; acrylic compns. for manufacture of <b>polymer solid electrolytes</b> for lithium <b>batteries</b> )				
IT	868-77-9 9002-89-5, Polyvinyl alcohol RL: MOA (Modifier or additive use); USES (Uses) (ion dissociation agents; acrylic compns. for manufacture of <b>polymer solid electrolytes</b> for lithium <b>batteries</b> )				
IT	233590-27-7DP, lithium complexes 233590-28-8DP, lithium complexes RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic compns. for manufacture of <b>polymer solid electrolytes</b> for lithium <b>batteries</b> )				
RN	233590-27-7 HCAPLUS				
CN	Oxirane, methyl-, polymer with oxirane, bis(2-methyl-2-propenoate), block, polymer with $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -[(2-methyl-1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)				
CM	1				
CRN	25852-47-5				
CMF	(C2 H4 O)n C8 H10 O3				
CCI	PMS				



CM 2

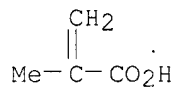
CRN 122985-55-1

CMF C4 H6 O2 . 1/2 (C3 H6 O . C2 H4 O)x

CM 3

CRN 79-41-4

CMF C4 H6 O2



CM 4

CRN 106392-12-5

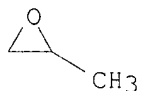
CMF (C3 H6 O . C2 H4 O)x

CCI PMS

CM 5

CRN 75-56-9

CMF C3 H6 O



CM 6

CRN 75-21-8

CMF C2 H4 O

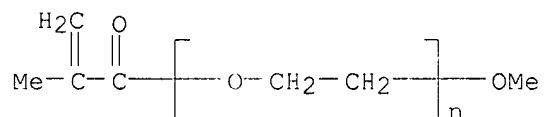


RN 233590-28-8 HCAPLUS

 CN Oxirane, methyl-, polymer with oxirane, bis(2-methyl-2-propenoate), block, polymer with  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl) and  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -[(2-methyl-1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

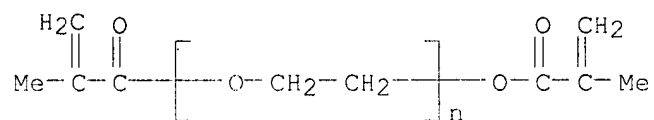
CM 1

CRN 26915-72-0  
 CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
 CCI PMS



CM 2

CRN 25852-47-5  
 CMF (C2 H4 O)<sub>n</sub> C8 H10 O3  
 CCI PMS

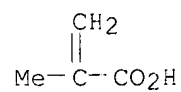


CM 3

CRN 122985-55-1  
 CMF C4 H6 O2 . 1/2 (C3 H6 O . C2 H4 O)<sub>x</sub>

CM 4

CRN 79-41-4  
 CMF C4 H6 O2

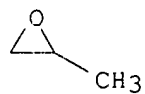


CM 5

CRN 106392-12-5  
 CMF (C3 H6 O . C2 H4 O)<sub>x</sub>  
 CCI PMS

CM 6

CRN 75-56-9  
 CMF C3 H6 O



CM 7

CRN 75-21-8

CMF C2 H4 O



L189 ANSWER 12 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1999:219933 HCAPLUS

DN 130:239896

 TI Polymer binder for electrodes in **batteries** with organic  
electrolyte

IN Simon, Bernard; Galaj, Stanislas; Boeue, Jean-pierre

PA Alcatel, Fr.

SO Eur. Pat. Appl., 17 pp.

CODEN: EPXXDW

DT Patent

LA French

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 905808	A1	19990331	EP 1998-401908	19980727 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	FR 2766970	A1	19990205	FR 1997-9949	19970804 <--
	FR 2766970	B1	19990924		
	JP 11135129	A	19990521	JP 1998-220846	19980804 <--
PRAI	FR 1997-9949	A	19970804	<--	

 AB A binder for the **battery** electrodes consists of a mixture of  
≥2 polymers provided with functional groups with opposite  
polarities. One of the polymers is provided with acid functional groups  
and the other polymer is provided with basic functional groups. After  
mixing, a complex identifiable by proportion of phys.-chemical properties is  
formed. Typically, the polymers are polyacrylic acid and polyethylene  
oxide. **Battery** electrodes are fabricated from a paste  
consisting of an active mass and the polymer binder provided in a solution

IC ICM H01M0004-62

ICS H01M0006-18; H01M0004-02

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

 ST polymer binder **battery** electrode

IT Polyoxyalkylenes, uses

RL: TEM (Technical or engineered material use); USES (Uses)

 (in polymer binder for electrodes in **batteries** with organic  
electrolyte)

 IT **Battery electrodes**

Binders

Secondary batteries

 (polymer binder for electrodes in **batteries** with organic  
electrolyte)

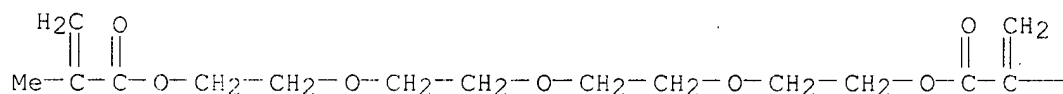
 IT 109-17-1, Tetraethylene glycol dimethacrylate 9003-01-4, Polyacrylic  
acid 9003-05-8, Polyacrylamide 25322-68-3, Polyethylene oxide

RL: TEM (Technical or engineered material use); USES (Uses)

 (in polymer binder for electrodes in **batteries** with organic  
electrolyte)

IT 9003-06-9, Acrylamide-acrylic acid copolymer 34664-01-2, Acrylic acid-ethylene oxide copolymer 52997-09-8, Acrylic acid-tetraethylene glycol dimethacrylate copolymer  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (polymer binder for electrodes in **batteries** with organic electrolyte)  
 IT 52997-09-8, Acrylic acid-tetraethylene glycol dimethacrylate copolymer  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (polymer binder for electrodes in **batteries** with organic electrolyte)  
 RN 52997-09-8 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, oxybis(2,1-ethanediyl)oxy-2,1-ethanediyl ester, polymer with 2-propenoic acid (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 109-17-1  
 CMF C16 H26 O7

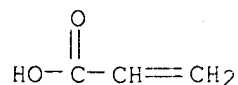
PAGE 1-A



PAGE 1-B

— Me

CM 2  
 CRN 79-10-7  
 CMF C3 H4 O2



RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L189 ANSWER 13 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1996:378448 HCAPLUS  
 DN 125:116436  
 TI High rate vacuum deposition of **polymer electrolytes**  
 AU Affinito, J. D.; Gross, M. E.; Coronado, C. A.; Dunham, G. C.; Martin, P. M.  
 CS Mater. Sci. Dep., Pacific Northwest Lab., Richland, WA, 99352, USA  
 SO Journal of Vacuum Science & Technology, A: Vacuum, Surfaces, and Films ( 1996), 14(3, Pt. 1), 733-738t



CODEN: JVTAD6; ISSN: 0734-2101

PB American Institute of Physics

DT Journal

LA English

AB Two new, high rate, vacuum processes have been developed for the deposition of **polymer electrolyte** layers on wide web substrates. One method involves the vacuum extrusion of monomer salt solns. followed by e-beam or UV curing. The **second** method involves the vacuum flash evaporation of the monomer salt solution followed by e-beam or UV curing. Each method is compatible with simultaneous, in-line, deposition by conventional processes like sputtering or evaporation in a wide web system. The **polymer electrolytes** were prepared from poly(ethylene glycol) diacrylate, poly(ethylene glycol) monomethyl ether and acrylic acid with a com. photoinitiator Darocure 4265. The salts used were LiCF<sub>3</sub>SO<sub>3</sub> and LiPF<sub>6</sub>. Optically clear **polymer electrolyte** layers may be deposited at line speeds in excess of 100 m min<sup>-1</sup> with these new techniques. Ionic **conductivity** measurements were presented for vacuum deposited, evaporated and extruded **polymer electrolyte** layers with thicknesses ranging from 2 to 50 μm. Application of these methods to ongoing electrochromic and **battery** work at the Pacific Northwest Laboratory was discussed.

CC 38-2 (Plastics Fabrication and Uses)

Section cross-reference(s): 37, 76

ST polyethylene glycol deriv **polyelectrolyte** vacuum deposition; acrylic acid **copolymer polyelectrolyte** vacuum deposition; lithium salt **polyelectrolyte** vacuum deposition

IT **Polyelectrolytes**

(high rate vacuum deposition of acrylic acid-poly(ethylene glycol) diacrylate-poly(ethylene glycol) monomethyl ether **polymer electrolytes** with lithium salts)

IT **Electric conductivity and conduction**

(ionic, ionic **conductivity** of high rate vacuum deposited acrylic acid-poly(ethylene glycol) diacrylate-poly(ethylene glycol) monomethyl ether **polymer electrolytes** with lithium salts)

IT Polymerization catalysts

(photochem., for high rate vacuum deposition of acrylic acid-poly(ethylene glycol) diacrylate-poly(ethylene glycol) monomethyl ether **polymer electrolytes** with lithium salts)

IT Polymerization

(photochem., high rate vacuum deposition of acrylic acid-poly(ethylene glycol) diacrylate-poly(ethylene glycol) monomethyl ether **polymer electrolytes** with lithium salts)

IT 21324-40-3, Lithium hexafluorophosphate 33454-82-9, Lithium trifluoromethane sulfonate

RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)

(high rate vacuum deposition of acrylic acid-poly(ethylene glycol) diacrylate-poly(ethylene glycol) monomethyl ether **polymer electrolytes** with lithium salts)

IT 178438-32-9P, Acrylic acid-polyethylene glycol

diacrylate-polyethylene glycol monomethyl ether copolymer

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)

(high rate vacuum deposition of acrylic acid-poly(ethylene glycol) diacrylate-poly(ethylene glycol) monomethyl ether **polymer electrolytes** with lithium salts)

IT 29059-10-7

RL: CAT (Catalyst use); USES (Uses)

(photoinitiator containing; high rate vacuum deposition of acrylic acid-poly(ethylene glycol) diacrylate-poly(ethylene glycol) monomethyl ether **polymer electrolytes** with lithium salts)

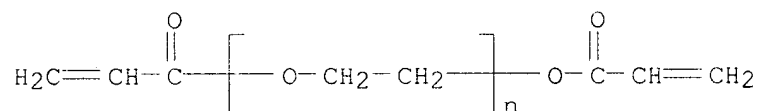
IT 7473-98-5  
 RL: CAT (Catalyst use); USES (Uses)  
 (photoinitiator; high rate vacuum deposition of acrylic acid-poly(ethylene glycol) diacrylate-poly(ethylene glycol) monomethyl ether **polymer electrolytes** with lithium salts)

IT 178438-32-9P, Acrylic acid-polyethylene glycol diacrylate-polyethylene glycol monomethyl ether copolymer  
 RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)  
 (high rate vacuum deposition of acrylic acid-poly(ethylene glycol) diacrylate-poly(ethylene glycol) monomethyl ether **polymer electrolytes** with lithium salts)

RN 178438-32-9 HCAPLUS  
 CN 2-Propenoic acid, polymer with  $\alpha$ -methyl- $\omega$ -hydroxypoly(oxy-1,2-ethanediyl) and  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -[(1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

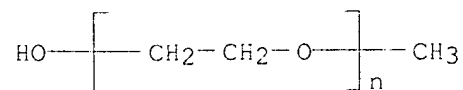
CM 1

CRN 26570-48-9  
 CMF (C2 H4 O)<sub>n</sub> C6 H6 O3  
 CCI PMS



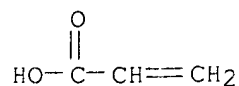
CM 2

CRN 9004-74-4  
 CMF (C2 H4 O)<sub>n</sub> C H4 O  
 CCI PMS



CM 3

CRN 79-10-7  
 CMF C3 H4 O2



L189 ANSWER 14 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1995:294688 HCAPLUS

DN 122:149225

TI Ion-conductive macromolecular compound

IN Takeda, Kazunari; Ido, Shuichi

PA Yuasa Battery Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

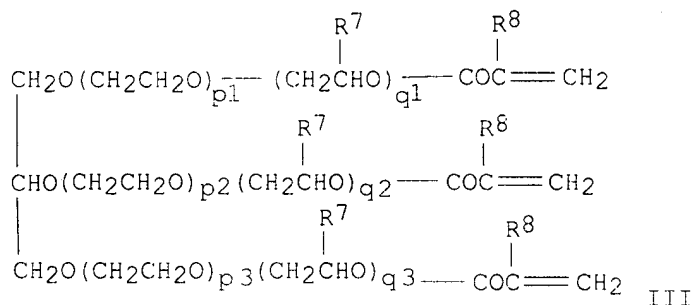
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06220147	A	19940809	JP 1993-11494	19930127 <--
	JP 3306150	B2	20020724		
PRAI	JP 1993-11494		19930127 <--		



AB The macromol. compound comprises  $\geq 1$  ionic compound as dissolved state,  $\text{R1}(\text{CH}_2\text{CH}_2\text{O})_m(\text{CH}_2\text{CHR}_2\text{O})_n\text{COC}(\text{R}_3):\text{CH}_2$  (I;  $\text{R1-3} = \text{H}$ ,  $\text{C} \geq 1$  lower alkyl;  $m \geq 1$ ;  $n \geq 0$ ;  $n/m = 0-5$ ),  $\text{CH}_2:\text{C}(\text{R}_4)\text{CO}(\text{CH}_2\text{CH}_2\text{O})_s(\text{CH}_2\text{CHR}_5\text{O})_t\text{COC}(\text{R}_6):\text{CH}_2$  (II;  $\text{R4-6} = \text{H}$ ,  $\text{C} \geq 1$  lower alkyl;  $s \geq 3$ ;  $t \geq 0$ ;  $t/s = 0-5$ ), and III ( $\text{R7-8} = \text{H}$ ,  $\text{C} \geq 1$  lower alkyl;  $p1 \geq 3$ ;  $p2 \geq 3$ ;  $p3 \geq 3$ ;  $q1 \geq 0$ ;  $q2 \geq 0$ ;  $q3 \geq 0$ ;  $q1/p1 = 0-5$ ;  $q2/p2 = 0-5$ ;  $q3/p3 = 0-5$ ;  $p1 + q1 \geq 10$ ;  $p2 + q2 \geq 10$ ;  $p3 + q3 \geq 10$ ) in which at least III is polymerized The title compound may contain ethylene oxide polymer and/or ethylene oxide-propylene oxide copolymer.

IC ICM C08F0299-02

ICS C08F0002-44; H01B0001-06; H01M0004-60; H01M0010-40

CC 76-2 (Electric Phenomena)

Section cross-reference(s): 37, 38

ST ion conductive compd polyoxyalkylene; glycerin polyoxyethylene

ether ion conductor; polyoxyethylene ion conductor;

polyoxypropylene copolymer ion conductor

IT Electric conductors, polymeric

(ion conductors containing)

IT Polyoxyalkylenes, properties

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(ion conductors containing)

IT 161162-48-7

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or

engineered material use); USES (Uses)

(ion **conductors** containing)

IT 7791-03-9, Lithium perchlorate (LiClO<sub>4</sub>) 9003-11-6, Ethylene  
oxide-propylene oxide copolymer 25322-68-3, Poly(ethylene oxide)  
RL: PRP (Properties); TEM (Technical or engineered material use); USES  
(Uses)

(ion **conductors** containing)

IT 161162-48-7  
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or  
engineered material use); USES (Uses)

(ion **conductors** containing)

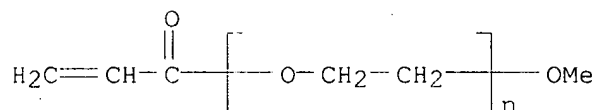
RN 161162-48-7 HCAPLUS  
CN Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol  
(3:1), 2-propenoate, polymer with  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -  
methoxypoly(oxy-1,2-ethanediyl) and  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -[(1-  
oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 32171-39-4

CMF (C<sub>2</sub> H<sub>4</sub> O)<sub>n</sub> C<sub>4</sub> H<sub>6</sub> O<sub>2</sub>

CCI PMS

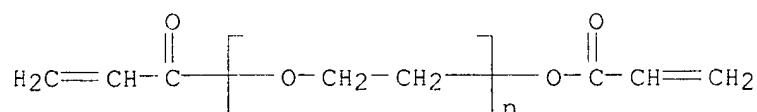


CM 2

CRN 26570-48-9

CMF (C<sub>2</sub> H<sub>4</sub> O)<sub>n</sub> C<sub>6</sub> H<sub>6</sub> O<sub>3</sub>

CCI PMS



CM 3

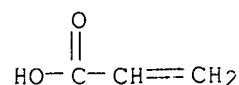
CRN 76416-58-5

CMF C<sub>3</sub> H<sub>8</sub> O<sub>3</sub> . 3 (C<sub>3</sub> H<sub>6</sub> O . C<sub>2</sub> H<sub>4</sub> O)<sub>x</sub> . x C<sub>3</sub> H<sub>4</sub> O<sub>2</sub>

CM 4

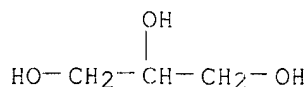
CRN 79-10-7

CMF C<sub>3</sub> H<sub>4</sub> O<sub>2</sub>



CM 5

CRN 56-81-5  
CMF C3 H8 O3

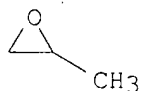


CM 6

CRN 9003-11-6  
CMF (C3 H6 O . C2 H4 O)x  
CCI PMS

CM 7

CRN 75-56-9  
CMF C3 H6 O



CM 8

CRN 75-21-8  
CMF C2 H4 O



L189 ANSWER 15 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1994:327534 HCAPLUS

DN 120:327534

TI Grafted microporous polyolefin separators for secondary batteries  
, and their manufacture and use

IN Gineste, Jean Luc; Pourcelly, Gerald; Brunea, John; Perton, Francoise;  
Broussely, Michel

PA SAFT S. A., Fr.

SO Fr. Demande, 19 pp.

CODEN: FRXXBL

DT Patent

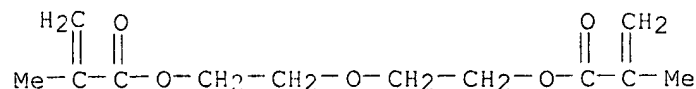
LA French

FAN.CNT 1

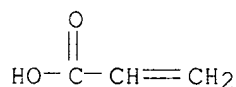
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	FR 2694842	A1	19940218	FR 1992-9900	19920811 <--
	FR 2694842	B1	19940930		

16 april 2008

EP 587470 A1 19940316 EP 1993-402037 19930810 <--  
 EP 587470 B1 19970402  
 R: DE, FR, GB  
 JP 06187961 A 19940708 JP 1993-198418 19930810 <--  
 US 5578400 A 19961126 US 1996-600281 19960212 <--  
 PRAI FR 1992-9900 A 19920811 <--  
 US 1993-103702 B1 19930810 <--  
 AB The separators consist of a microporous polyolefin film grafted with  
 ≥1 monomers selected from diethylene glycol-dimethacrylate (DGD),  
 furfuryl acrylate, and a mixture of diethylene glycol-dimethacrylate and  
 acrylic acid. The separators are manufactured by 3-stage process comprising  
 irradiating the films, optionally storing the irradiated films, and  
 immersing the films in a grafting solution comprising the monomer(s) and a  
 solvent of water, MeOH, and/or BuOH. The separators are used in  
**batteries** containing a nonaq. **electrolyte**, an anode selected  
 from Li, Li alloys, and Li intercalation compds., and a cathode selected  
 from oxides and sulfides of transition metals. A 50-μm Celgard 2502  
 (polypropylene) film was irradiated with electrons at 1 Mrad in the presence  
 of O<sub>2</sub> at 65° for 19 h, and immersed in a solution of DGD 19, MeOH 62,  
 and water 19 volume% containing FeNH<sub>4</sub>(SO<sub>4</sub>)<sub>2</sub> 0.2 and methylene blue 0.88 g/L,  
 for 32% grafting. **Batteries** using the film as separator and LiAsF<sub>6</sub>  
 as the salt had **elec.** resistance 8.1-9.4 Ω-cm<sup>2</sup>.  
 IC ICM H01M0002-16  
 ICS H01M0010-24; C08J0007-18  
 ICI C08L0051-06  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 38  
 ST polyolefin graft copolymer **battery** separator; diethyleneglycol  
 dimethacrylate polypropylene graft copolymer  
 IT **Batteries, secondary**  
 (separators, polyolefin graft copolymer)  
 IT 2358-84-1D, Diethylene glycol dimethacrylate, graft copolymers with  
 polyolefins 10525-17-4D, Furfuryl acrylate, graft copolymers with  
 polyolefins 64054-76-8D, graft copolymers with polyolefins  
 RL: USES (Uses)  
 (for **battery** separators)  
 IT 61-73-4, Methylene blue 7447-39-4, Copper chloride, uses 7705-08-0,  
 Iron chloride, uses 7758-98-7, Copper sulfate, uses 10028-22-5, Iron  
 sulfate 10045-89-3, Mohr's salt  
 RL: USES (Uses)  
 (in **battery** separator manufacture)  
 IT 64054-76-8D, graft copolymers with polyolefins  
 RL: USES (Uses)  
 (for **battery** separators)  
 RN 64054-76-8 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 1,1'-(oxydi-2,1-ethanediyl) ester, polymer  
 with 2-propenoic acid (CA INDEX NAME)  
 CM 1  
 CRN 2358-84-1  
 CMF C12 H18 O5



CM 2

 CRN 79-10-7  
 CMF C3 H4 O2


L189 ANSWER 16 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1993:14860 HCAPLUS

DN 118:14860

TI Ion-conductive polymer gel electrolyte

IN Yasukawa, Eiki; Seo, Iwao; Miyata, Kikuko; Mori, Shoichiro; Ida, Kazuhiko; Shima, Kunihiisa

PA Mitsubishi Yuka K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

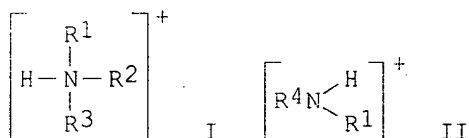
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04073803	A	19920309	JP 1990-187420	19900716 <--
PRAI	JP 1990-187420		19900716	<--	
OS	MARPAT 118:14860				
GI					



AB An ion-conductive polymer gel electrolyte

with a high ion conductivity at room temperature comprises a matrix polymer made of a vinyl polymer, a solute consisting of ammonium ion I and/or II [R1-3 = H, C1-4 alkyl, C6-10 aryl; R4 = C3-10 moiety forming aliphatic or aromatic heterocyclyl by combining with N in II] as a cation component and/or an acid conjugated base as an anion component, and an organic solvent.

IC ICM H01E0001-06

ICS C08K0005-00; C08K0005-17; C08L0033-14; H01G0009-02;

H01M0006-18; H01M0010-40

CC 76-2 (Electric Phenomena)

Section cross-reference(s): 37

ST ion conductive polymer gel electrolyte

IT Electrolytes

(ion-conductive, polymer, gel, with high conductivity at room temperature)

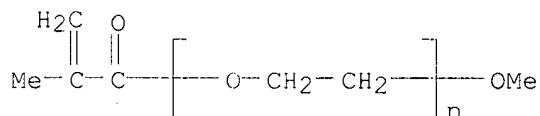
IT 11128-98-6, Ammonium borate 19090-60-9, Ammonium adipate 25249-16-5,

2-Hydroxyethyl methacrylate homopolymer 29403-23-4 54141-42-3

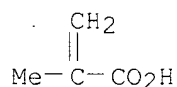
82169-85-5, Ammonium azelate 144280-25-1 144595-39-1

144892-77-3

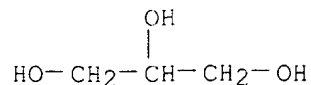
RL: USES (Uses)  
 (ion-conductive polymer gel electrolyte  
 containing)  
 IT 144595-39-1  
 RL: USES (Uses)  
 (ion-conductive polymer gel electrolyte  
 containing)  
 RN 144595-39-1 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, polymer with  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl) and 1,2,3-propanetriol  
 (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 26915-72-0  
 CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
 CCI PMS



CM 2  
 CRN 79-41-4  
 CMF C4 H6 O2



CM 3  
 CRN 56-81-5  
 CMF C3 H8 O3



L189 ANSWER 17 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1992:452378 HCAPLUS  
 DN 117:52378  
 TI **Polymer solid electrolytes**  
 IN Ido, Shuichi; Noda, Tomohiko; Imachi, Hiroshi  
 PA Yuasa Battery Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF  
 DT **Patent**  
 LA Japanese

16 april 2008



FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03205416	A	19910906	JP 1990-825	19900106 <--
	JP 08032754	B	19960329		
PRAI	JP 1990-825		19900106	<--	

AB The **electrolytes** comprise a network of (meth)acrylate-crosslinked ethylene oxide-propylene oxide copolymer, an ionic salts, and optionally compds. miscible with the ionic salts. Thus, a mixture of dimethacrylate of ethylene oxide-propylene oxide copolymer (mol ratio 80:20, mol. weight 4200) 70, polyoxyethylene Me ether monomethacrylate ester (mol. weight 250) 30, LiClO<sub>4</sub> 9.5, dimethoxyethane 100, benzophenone 2, and Et<sub>3</sub>N 2 parts was cast on a glass plate and UV-irradiated to form a 100  $\mu$ m-thick film with ionic **conductivity**  $8 + 10^{-6}$  S/cm and no cracking on 180° flexing vs.  $8 + 10^{-6}$  and cracking, resp., for a control prepared from ethylene oxide-propylene oxide copolymer dimethacrylate with mol. weight 450. The **electrolytes** are useful for **batteries**, electrochromic devices, , electrochem. sensors, etc.

IC ICM C08F0299-00

ICS H01B0001-06; H01M0006-18; H01M0010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 35, 76

ST polyoxyalkylene acrylate crosslinked solid **electrolyte**

IT **Battery electrolytes**

(lithium salt in (meth)acrylate-crosslinked polyoxyalkylene matrix for)

IT Optical imaging devices

(electrochromic, **electrolytes** for, (meth)acrylate-crosslinked polyoxyalkyelen-lithium salt)

IT 138719-27-4D, lithium complexes 138719-28-5D, lithium complexes

141182-93-6D, lithium complexes

RL: USES (Uses)

(**electrolyte**, for **batteries** and electrochromic devices)

IT 7791-03-9, Lithium perchlorate

RL: USES (Uses)

(**electrolytes** containing, (meth)acrylate-crosslinked polyoxyalkylene copolymers and, for **batteries** and electrochromic devices)

IT 138719-27-4D, lithium complexes 141182-93-6D, lithium complexes

RL: USES (Uses)

(**electrolyte**, for **batteries** and electrochromic devices)

RN 138719-27-4 HCAPLUS

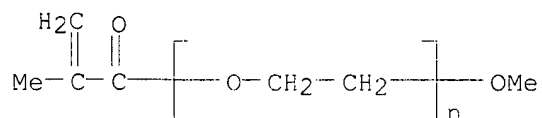
CN Oxirane, methyl-, polymer with oxirane, bis(2-methyl-2-propenoate), polymer with  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediy1) (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

CCI PMS



CM 2

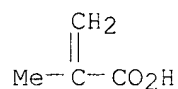
CRN 87003-89-2

CMF C4 H6 O2 . 1/2 (C3 H6 O . C2 H4 O)x

CM 3

CRN 79-41-4

CMF C4 H6 O2



CM 4

CRN 9003-11-6

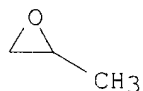
CMF (C3 H6 O . C2 H4 O)x

CCI PMS

CM 5

CRN 75-56-9

CMF C3 H6 O



CM 6

CRN 75-21-8

CMF C2 H4 O

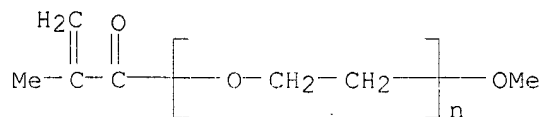


RN 141182-93-6 HCAPLUS

CN Oxirane, methyl-, polymer with oxirane, di-2-propenoate, polymer with  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0  
 CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
 CCI PMS

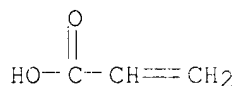


CM 2

CRN 52503-44-3  
 CMF (C3 H6 O . C2 H4 O)<sub>x</sub> . 2 C3 H4 O2

CM 3

CRN 79-10-7  
 CMF C3 H4 O2

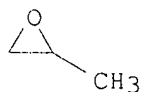


CM 4

CRN 9003-11-6  
 CMF (C3 H6 O . C2 H4 O)<sub>x</sub>  
 CCI PMS

CM 5

CRN 75-56-9  
 CMF C3 H6 O



CM 6

CRN 75-21-8  
 CMF C2 H4 O

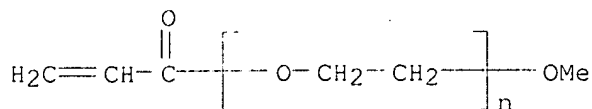


DN 116:118869  
 TI Acryloyl-modified polyalkylene oxide **copolymer** solid **electrolyte**  
 IN Mizuno, Shinichiro  
 PA Toyo Ink Mfg. Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF  
 DT **Patent**  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03238704	A	19911024	JP 1990-35449	19900216 <--
PRAI	JP 1990-35449		19900216	<--	

AB The **electrolyte** contains a metal salt and a crosslinked resin containing a copolymer of an acryloyl-modified polyalkylene oxide with an organic compound having a double bond and  $\geq 1$  functional groups. The resin may be crosslinked with a crosslinking agent. An **electrolyte** containing methoxy-modified polyethylene glycol monoacrylate-2-hydroxyethyl acrylate copolymer and LiClO<sub>4</sub> showed high ion **conductivity**  
 IC ICM H01B0001-06  
 ICS C08K0003-10; C08L0033-14; G02F0001-15; H01M0006-18; H01M0010-40  
 CC 76-2 (Electric Phenomena)  
 Section cross-reference(s): 38  
 ST acryloyl polyalkylene oxide solid **electrolyte**  
 IT **Electrolytes**  
 (solid, acryloyl-modified polyalkylene oxide copolymer, with high ion **conductivity**)  
 IT 7791-03-9, Lithium perchlorate  
 RL: USES (Uses)  
 (acryloyl-modified polyalkylene oxide **copolymer** solid **electrolyte** containing)  
 IT 139308-66-0 139308-67-1 139308-68-2 139308-69-3  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (solid **electrolyte**, with high ion **conductivity**)  
 IT 139308-69-3  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (solid **electrolyte**, with high ion **conductivity**)  
 RN 139308-69-3 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, polymer with oxiranylmethyl 2-methyl-2-propenoate and  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

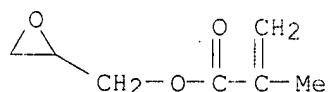
CM 1  
 CRN 32171-39-4  
 CMF (C2 H4 O)<sub>n</sub> C4 H6 O2  
 CCI PMS



CM 2

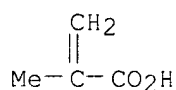
16 april 2008

CRN 106-91-2  
CMF C7 H10 O3



CM 3

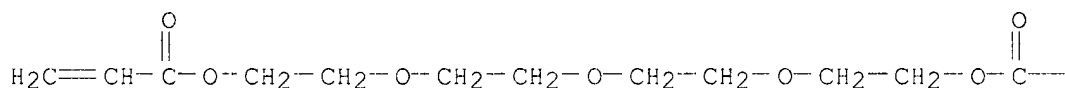
CRN 79-41-4  
CMF C4 H6 O2



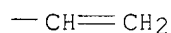
- L189 ANSWER 19 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 1991:495860 HCAPLUS  
DN 115:95860  
TI Solid state **electrolyte** membranes for direct methanol  
**fuel cells**  
AU Kjaer, Jorgen; Yde-Andersen, Steen; Knudsen, Niels A.; Skou, Eivind  
CS Energy Res. Lab. A/S, Odense, DK-5230, Den.  
SO Solid State Ionics (1991), 46(1-2), 169-73  
CODEN: SSIOD3; ISSN: 0167-2738  
DT Journal  
LA English  
AB Solid state **electrolyte** membranes of Sn-mordenite with  
tetraethylene glycol diacrylate (I)/acrylic acid polymer binder have a  
proton **conductivity** of 10-3/Ω-cm at ambient temperature and 100%  
humidity and are suitable for use in direct MeOH **fuel**  
**cells** as replacement for Nafion membranes. The 0.1-0.3 mm  
membranes were prepared by mixing monomer components for the binder and  
Sn-mordenite powder in 1:1 ratio, placed between Mylar sheets, and cured  
under UV light. The mech. properties of the membranes were dependent on  
monomer mixture composition; 3:1 I/acrylic acid mixts. produced membranes with  
low MeOH uptake/diffusion and sufficient mech. stability for **fuel**  
**cell** use.  
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38, 76  
ST tin mordenite membrane polyethyleneglycolacrylate binder; proton  
**cond** mordenite membrane **electrolyte**; methanol  
**fuel cell** membrane **electrolyte**  
IT **Fuel cells**  
(methanol, tin mordenite-polymer binder membrane  
**electrolytes** for)  
IT **Electric conductivity and conduction**  
(ionic, of tin mordenite membranes, polymer binder composition effect on)  
IT Zeolites, properties  
RL: PRP (Properties)  
(mordenite-type, tin-exchanged, membranes, proton **conductivity** and  
mech. properties of, polymer binder effect on, for methanol  
**fuel cell electrolyte**)

IT 79643-10-0  
 RL: USES (Uses)  
 (binders, tin mordenite membranes containing, proton conductivity and mech. properties of, for methanol fuel cells)  
 IT 67-56-1, Methanol, properties  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (diffusion of, in tin mordenite-polymer binder membranes, fuel cell use in relation to)  
 IT 79643-10-0  
 RL: USES (Uses)  
 (binders, tin mordenite membranes containing, proton conductivity and mech. properties of, for methanol fuel cells)  
 RN 79643-10-0 HCAPLUS  
 CN 2-Propenoic acid, polymer with oxybis(2,1-ethanedioxy-2,1-ethanedioyl) di-2-propenoate (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 17831-71-9  
 CMF C14 H22 O7

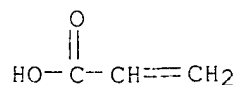
PAGE 1-A



PAGE 1-B



CM 2  
 CRN 79-10-7  
 CMF C3 H4 O2



L189 ANSWER 20 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1989:193740 HCAPLUS  
 DN 110:193740  
 OREF 110:32189a,32192a  
 TI Design of single ionic conduction in polymeric solid electrolytes  
 AU Ono, Hiroyuki; Tsuchida, Eishun  
 CS Dep. Polym. Chem., Waseda Univ., Tokyo, 160, Japan  
 SO Journal of Macromolecular Science, Chemistry (1989), A26(2-3), 551-66

CODEN: JMCHBD; ISSN: 0022-233X

DT Journal

LA English

AB Oligo(oxyethylene) methacrylate (I) was synthesized as a basic material to design a **polymeric solid electrolyte**. The I homopolymer has a glass transition temperature of  $-70$  to  $-80^{\circ}$ , solubilizes inorg. salts without solvent, and the dissociated ions migrate fast to give very high ionic **conductivity** ( $>10^{-5}$  S/cm). Although the a.c. **conductivity** is high, the current decreases gradually under d.c. conditions. This is improved by the design of an ionic **conductor** using only cations. Oligo(oxyethylene) methacrylate-alkali metal methacrylate copolymer is prepared as an organic solid **electrolyte** which allows cationic single-ion **conduction**. The ionic **conductivity** of the films depends on the **electrolyte** content, the dissociation energy of the comonomeric **electrolytes**, and the degree of segmental motion surrounding the ions in the polymer matrix. The ionic **conductivity** of Li or K is  $\text{apprx.} 10^{-6}$  S/cm in these polymeric systems at  $80^{\circ}$ . The plot of logarithmic **conductivity** vs. reciprocal absolute temperature is a curved line. The

Williams-Landel-Ferry parameters, calculated from the temperature dependence of the **conductivity**, coincided with theor. values within a certain range. The single-ion **conduction** in these films is affected considerably by the segmental motion of the matrix polymer. This is also confirmed by the Vogel-Tammann-Fulcher plot.

CC 36-5 (Physical Properties of Synthetic High Polymers)  
Section cross-reference(s): 76

ST single ionic **conduction** solid **polyelectrolyte**;  
polyoxyethylene methacrylate single ionic **cond**; lithium  
methacrylate copolymer ionic **cond**; potassium methacrylate  
copolymer ionic **cond**; segmental motion **polyelectrolyte**.  
ionic **cond**

IT Glass temperature and transition  
(of oligo(oxyethylene) methacrylate copolymers, single ionic  
**conduction** in relation to)

IT Chains, chemical  
(segmental motion of, of oligo(oxyethylene) methacrylate polymers,  
single ionic **conduction** in relation to)

IT **Electric conductivity and conduction**  
(ionic, of oligo(oxyethylene) methacrylate polymers)

IT **Polyelectrolytes**  
(solid, oligo(oxyethylene) methacrylate polymers, single ionic  
**conduction** in)

IT 7791-03-9, Lithium perchlorate  
RL: PRP (Properties)  
(oligo(oxyethylene) methacrylate polymers containing, ionic **conductivity**  
of)

IT 103285-01-4 120359-13-9 120359-14-0  
RL: PRP (Properties)  
(solid **polyelectrolytes**, single ionic **conduction**  
in)

IT 103285-01-4 120359-13-9 120359-14-0  
RL: PRP (Properties)  
(solid **polyelectrolytes**, single ionic **conduction**  
in)

RN 103285-01-4 HCAPLUS

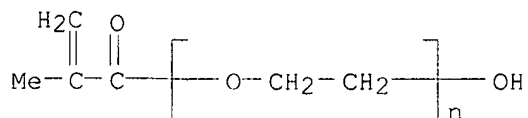
CN 2-Propenoic acid, 2-methyl-, lithium salt, polymer with  
 $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -hydroxypoly(oxy-1,2-  
ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 25736-86-1

CMF (C2 H4 O)n C4 H6 O2

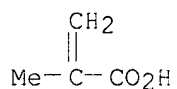
CCI PMS



CM 2

CRN 13234-23-6

CMF C4 H6 O2 . Li



● Li

RN 120359-13-9 HCAPLUS

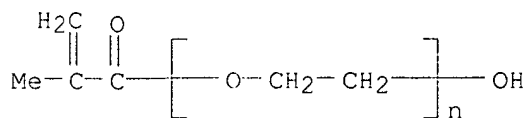
 CN 2-Propenoic acid, 2-methyl-, sodium salt (1:1), polymer with  
 $\alpha$ -(2-methyl-1-oxo-2-propen-1-yl)- $\omega$ -hydroxypoly(oxy-1,2-ethanediyl) (CA INDEX NAME)

CM 1

CRN 25736-86-1

CMF (C2 H4 O)n C4 H6 O2

CCI PMS

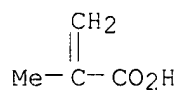


CM 2

CRN 5536-61-8

CMF C4 H6 O2 . Na





● Na

RN 120359-14-0 HCAPLUS

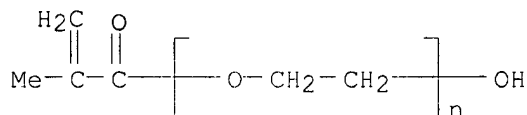
CN 2-Propenoic acid, 2-methyl-, potassium salt, polymer with  
 $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -hydroxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 25736-86-1

CMF (C2 H4 O)<sub>n</sub> C4 H6 O2

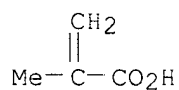
CCI PMS



CM 2

CRN 6900-35-2

CMF C4 H6 O2 . K



● K

L189 ANSWER 21 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1988:476533 HCAPLUS

DN 109:76533

OREF 109:12779a,12782a

TI Ion tunneling in **polymeric solid electrolytes** for  
**battery** and electrochromic display in the dry state

AU Tsuchida, Eishun

CS Dep. Polym. Chem., Waseda Univ., Tokyo, 160, Japan

SO Journal of Macromolecular Science, Chemistry (1988), A25(5-7),  
 687-704

CODEN: JMCHBD; ISSN: 0022-233X

DT Journal

LA English

AB Poly[(oligooxyethylene)methacrylate]-alkali metal salt hybrids and  
 (oligooxyethylene)methacrylate-alkali metal methacrylate copolymer showed

ionic conductivities  $>10^{-5}$  and  $10^{-7}$  S/cm, resp., at room temperature and bi- or single-ionic tunneling behavior. An all-solid-state electrochromic display and a dry **battery** were prepared with these **polymer solid electrolytes**. The electrochromic display showed excellent coloring and bleaching response at 1-3 V, and the **battery** had an open-circuit voltage (3.1 V) stability of  $>2$  wk.

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 37, 38, 74, 76

ST ion tunneling **polymer electrolyte; battery**  
ion tunneling **polymer electrolyte**; electrochromic display ion tunneling polymer; polyoligooxyethylene methacrylate **electrolyte battery**; alkali metal salt **polymer electrolyte**; methacrylate **copolymer battery electrolyte**; elec cond **battery conducting polymer**

IT Tunneling  
(in polymeric solid **electrolytes** for **battery** and electrochromic display in dry state)

IT **Electric conductors**  
(polymeric, polyethylene glycol acrylate copolymers, ion tunneling in, for **electrolytes** in **battery** and electrochromic display in dry state)

IT Optical imaging devices  
(electrochromic, solid-state, **polymer electrolyte** for, bi-ionic and single ionic tunneling in)

IT **Electric conductivity and conduction**  
(ionic, of poly[(oligooxyethylene)methacrylate]-metal salt hybrids, salt content dependence of)

IT **Batteries, primary**  
(solid-**electrolyte**, lithium-manganese dioxide, **polymer electrolyte** for, bi-ionic and single ionic tunneling in)

IT 1314-35-8, uses and miscellaneous 50926-11-9  
RL: USES (Uses)  
(electrodes, in electrochromic display with polyethylene glycol metal salt acrylate **copolymer electrolyte**)

IT 87105-87-1  
RL: USES (Uses)  
(**electrolytes**, containing lithium perchlorate, for **battery** and electrochromic display in dry state)

IT 333-20-0, Potassium thiocyanate 540-72-7, Sodium thiocyanate 556-65-0, Lithium thiocyanate 7791-03-9, Lithium perchlorate  
RL: USES (Uses)  
(**electrolytes**, containing polyethylene glycol Me ether methacrylate polymer, with bi- or single ionic tunneling, for **battery** and electrochromic display in dry state)

IT 95410-90-5 102814-54-0 104491-11-4  
RL: USES (Uses)  
(**electrolytes**, ionic conductivity of, for **battery** and electrochromic display in dry state)

IT 26915-72-0, Polyethylene glycol methyl ether methacrylate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(**polymerization** of, for **electrolytes** containing alkali metal salts, with bi- or single ionic tunneling, for **battery** and electrochromic display in dry state)

IT 95410-90-5 102814-54-0 104491-11-4  
RL: USES (Uses)  
(**electrolytes**, ionic conductivity of, for **battery** and electrochromic display in dry state)

RN 95410-90-5 HCAPLUS

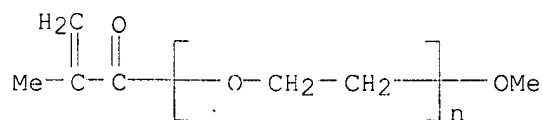
CN 2-Propenoic acid, 2-methyl-, sodium salt (1:1), polymer with  
 $\alpha$ -(2-methyl-1-oxo-2-propen-1-yl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

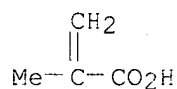
CCI PMS



CM 2

CRN 5536-61-8

CMF C4 H6 O2 . Na



⊙ Na

RN 102814-54-0 HCAPLUS

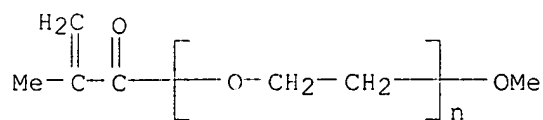
CN 2-Propenoic acid, 2-methyl-, lithium salt, polymer with  
 $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

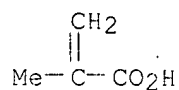
CCI PMS



CM 2

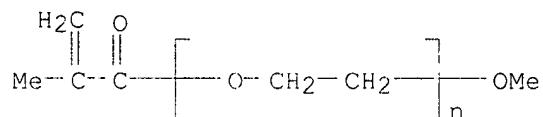
CRN 13234-23-6

CMF C4 H6 O2 . Li

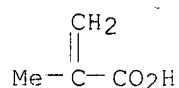


● Li

RN 104491-11-4 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, potassium salt, polymer with  
 α-(2-methyl-1-oxo-2-propenyl)-ω-methoxypoly(oxy-1,2-  
 ethanediyl) (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 26915-72-0  
 CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
 CCI PMS



CM 2  
 CRN 6900-35-2  
 CMF C4 H6 O2 . K



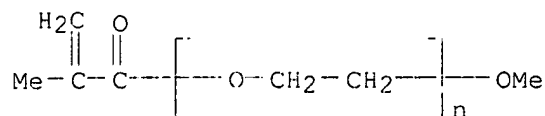
● K

L189 ANSWER 22 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1986:534516 HCAPLUS  
 DN 105:134516  
 OREF 105:21723a,21726a  
 TI Polymeric ionic **conductors**  
 IN Kobayashi, Norihisa; Uchiyama, Masahiro; Tsuchida, Hidetoshi  
 PA Japan  
 SO Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DT **Patent**  
 LA Japanese  
 FAN.CNT 1

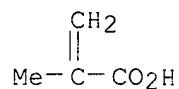
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	----	-----	-----
PI	JP 61047713	A	19860308	JP 1984-168820	19840814 <--

16 april 2008

PRAI JP 1984-168820 19840814 <--  
 AB A polymeric ionic **conductor** forming flexible films and useful in solid-**electrolyte batteries** and electrochromic display devices comprises 1-40 mol% (meth)acrylic acid (or its Li, Na, or K salt) and 60-99 mol% polyethylene glycol (d. p. 3-20) mono(meth)acrylate. Thus, a mixture of 0.5 g polyethylene glycol (d.p. 5) Me ether methacrylate (I) (mol. weight 250) and 0.05 g Li methacrylate in 5 mL MeOH containing AIBN (in an amount of 1 mol/mol-I) was cast on a Teflon plate and polymerized at 100° for 24 h under reduced pressure to give a 0.13-mm polymeric film (mol. weight 53,000) exhibiting ionic **conductivity**  $1.1 \times 10^{-7}$  S/cm.  
 IC ICM C08F0220-28  
 ICI C08F0220-28, C08F0220-06  
 CC 35-4 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 72, 76  
 ST polyethylene glycol methacrylate copolymer; lithium methacrylate copolymer ionic **conductor**; solid **electrolyte battery** polymeric **conductor**; electrochromic display device polymeric **conductor**  
 IT **Electric conductors**  
 (ionic, methacrylic acid (salt)-polyethylene glycol (meth)acrylate copolymers as, film-formable, for solid-**electrolyte batteries** or electrochromic display devices)  
 IT **Batteries, secondary**  
 (solid-**electrolyte**, methacrylic acid (salt)-polyethylene glycol (meth)acrylate copolymers for)  
 IT 87228-08-8 95410-90-5 102814-54-0 104491-11-4  
 104491-12-5 104491-13-6 104491-14-7 104491-16-9  
 RL: USES (Uses)  
 (films, ionic **conductive**, for solid-**electrolyte batteries** or electrochromic display apparatus)  
 IT 95410-90-5 102814-54-0 104491-11-4  
 RL: USES (Uses)  
 (films, ionic **conductive**, for solid-**electrolyte batteries** or electrochromic display apparatus)  
 RN 95410-90-5 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, sodium salt (1:1), polymer with  $\alpha$ -(2-methyl-1-oxo-2-propen-1-yl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl) (CA INDEX NAME)  
 CM 1  
 CRN 26915-72-0  
 CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
 CCI PMS



CM 2  
 CRN 5536-61-8  
 CMF C4 H6 O2 . Na

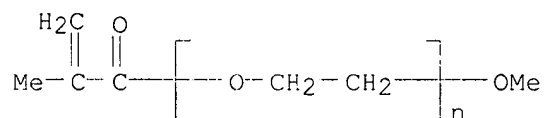


● Na

RN 102814-54-0 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, lithium salt, polymer with  
 α-(2-methyl-1-oxo-2-propenyl)-ω-methoxypoly(oxy-1,2-  
 ethanediyl) (9CI) (CA INDEX NAME)

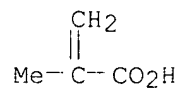
CM 1

CRN 26915-72-0  
 CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
 CCI PMS



CM 2

CRN 13234-23-6  
 CMF C4 H6 O2 . Li

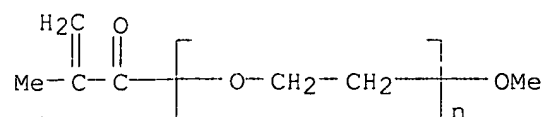


● Li

RN 104491-11-4 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, potassium salt, polymer with  
 α-(2-methyl-1-oxo-2-propenyl)-ω-methoxypoly(oxy-1,2-  
 ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0  
 CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
 CCI PMS

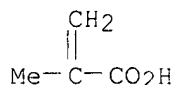


16 april 2008

CM 2

CRN 6900-35-2

CMF C4 H6 O2 . K



• K

L189 ANSWER 23 OF 23 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1986:415981 HCAPLUS

DN 105:15981

OREF 105:2569a,2572a

TI Poly[lithium methacrylate-co-oligo(oxyethylene)methacrylate] as a solid **electrolyte** with high ionic **conductivity**

AU Kobayashi, Norihisa; Uchiyama, Masahiro; Tsuchida, Eishun

CS Dep. Polym. Chem., Waseda Univ., Tokyo, 160, Japan

SO Solid State Ionics (1985), 17(4), 307-11

CODEN: SSIOD3; ISSN: 0167-2738

DT Journal

LA English

AB Poly[lithium methacrylate-co-oligo(oxyethylene)methacrylate] film was prepared as a **polymeric solid electrolyte** which showed a Li ionic **conductivity** of  $2 \times 10^{-7}$  (S/cm). This film contains no organic plasticizer nor low-mol. weight Li salts and was shown to be a single-ion **conductor** in the solid state. Li<sup>+</sup> ionic **cond**. was deeply influenced by the glass transition temperature and Li methacrylate content of the film. A rechargeable **battery** composed of metallic Li/this film/graphite showed better characteristics than any previously reported systems using **polymeric solid electrolytes**.

CC 76-2 (Electric Phenomena)

Section cross-reference(s): 36

ST lithium methacrylate **polymer electrolyte**;  
oligoxyethylenemethacrylate polymer **cond**;  
oxyethylenemethacrylate polymer **cond**

IT **Batteries, primary**

(from poly[lithium methacrylate-oligo(oxyethylene)methacrylate])

IT Polymerization

(of lithium methacrylate with oligo(oxyethylene)methacrylate for ionic **conductors**)

IT **Electric conductors**

(ionic, from poly[lithium methacrylate-oligo(oxyethylenemethacrylate)])

IT **Electric conductivity and conduction**

(ionic, in poly[lithium methacrylate-co-oligo(oxyethylene)methacrylate] films)

IT **Electric conductivity and conduction**

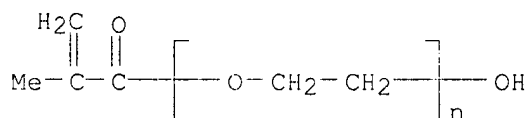
(ionic, of poly[lithium methacrylate-oligo(oxyethylene)methacrylate])

IT 78-67-1 7791-03-9 13234-23-6 25179-23-1

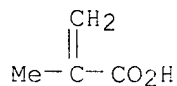
RL: USES (Uses)

(in ionic **conductor** polymer preparation)

IT 103285-01-4P  
 RL: PREP (Preparation)  
 (preparation of, as ionic conductor)  
 IT 102814-54-0  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (solid electrolyte, with high ionic conductivity)  
 IT 103285-01-4P  
 RL: PREP (Preparation)  
 (preparation of, as ionic conductor)  
 RN 103285-01-4 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, lithium salt, polymer with  
 $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -hydroxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)  
  
 CM 1  
  
 CRN 25736-86-1  
 CMF (C2 H4 O)<sub>n</sub> C4 H6 O2  
 CCI PMS



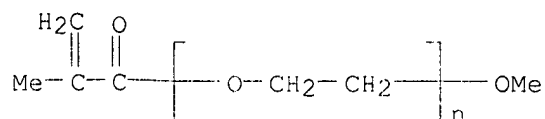
CM 2  
  
 CRN 13234-23-6  
 CMF C4 H6 O2 . Li



● Li

IT 102814-54-0  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (solid electrolyte, with high ionic conductivity)  
 RN 102814-54-0 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, lithium salt, polymer with  
 $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)  
  
 CM 1  
  
 CRN 26915-72-0  
 CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
 CCI PMS

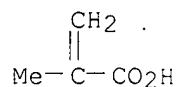




CM 2

CRN 13234-23-6

CMF C4 H6 O2 . Li



● Li

=> d his

(FILE 'HOME' ENTERED AT 11:08:26 ON 16 APR 2008)

SET COST OFF

FILE 'HCAPLUS' ENTERED AT 11:09:18 ON 16 APR 2008

L1 2 S US20070040145/PN OR (US2005-571998# OR WO2004-JP576 OR JP2003  
E MURAMOTO/AU  
E MURAMOTO H/AU  
L2 77 S E3,E17  
E MURAMOTO NAME/AU  
E HIROO/AU  
E NIITANI/AU  
L3 13 S E31  
E TAKESHI/AU  
L4 4 S E3  
E TAKESHI N/AU  
L5 4 S E10  
E NITANI/AU  
L6 1 S E26  
E AOYAGI/AU  
L7 48 S E37  
E AOYAGI KO/AU  
L8 29 S E3,E8,E9  
L9 10 S E78  
E KOICHIRO/AU  
E KO ICHIRO/AU  
L10 1 S E3  
E L1 PA  
E NIPPON SODA/CO  
L11 3967 S E3-E15/CO,PA,CS  
E E5+ALL  
L12 4281 S E2+RT OR E2-E5/PA,CS  
L13 1 S L1 AND L2-L12  
SEL RN

16 april 2008

FILE 'REGISTRY' ENTERED AT 11:13:50 ON 16 APR 2008

L14 14 S E1-E14  
L15 10 S L14 AND PMS/CI AND NC>=2

FILE 'HCAPLUS' ENTERED AT 11:15:04 ON 16 APR 2008

L16 181 S L2-L10 NOT L13

FILE 'REGISTRY' ENTERED AT 11:15:18 ON 16 APR 2008

FILE 'HCAPLUS' ENTERED AT 11:15:18 ON 16 APR 2008

L17 TRA L16 1- RN : 1657 TERMS

FILE 'REGISTRY' ENTERED AT 11:15:24 ON 16 APR 2008

L18 1657 SEA L17  
L19 209 S L18 AND PMS/CI  
L20 155 S L19 NOT PROPENOIC  
L21 110 S L20 AND NC>=2  
L22 27 S L21 AND C2H4O  
L23 14 S L22 NOT (BR/ELS OR OC2/ES)  
L24 12 S L23 NOT (OC2-C6/ES OR N/ELS)  
L25 83 S L21 NOT L22  
L26 54 S L19 NOT L20  
L27 6 S L26 AND C4H6  
L28 3 S L27 NOT N/ELS  
L29 2 S L28 NOT 107080-92-2  
L30 17 S L26 AND C2H4O  
L31 13 S L30 NOT N/ELS  
L32 4 S L30 NOT L31  
L33 1 S L31 AND 79-41-4/CRN  
L34 11 S L31 NOT L15,L24,L29,L33  
L35 35 S L15,L24,L29,L33,L34

FILE 'HCAPLUS' ENTERED AT 11:29:51 ON 16 APR 2008

L36 135 S L35  
L37 20 S L36 AND L1-L13  
L38 0 S L37 AND PY<=2004 NOT P/DT  
L39 7 S L37 AND (PD<=20040123 OR PRD<=20040123 OR AD<=20040123) AND P  
L40 7 S L13,L39

FILE 'HCAPLUS' ENTERED AT 11:31:09 ON 16 APR 2008

FILE 'REGISTRY' ENTERED AT 12:49:56 ON 16 APR 2008

L41 613394 S PMS/CI AND NC>=2 AND O>=3  
L42 STR  
L43 50 S L42 SAM SUB=L41  
L44 168078 S L42 FUL SUB=L41  
L45 STR L42  
L46 50 S L45 CSS SAM SUB=L44  
L47 120715 S L45 CSS FUL SUB=L44  
L48 STR L45  
L49 20 S L48 CSS SAM SUB=L44  
L50 1394 S L48 CSS FUL SUB=L44  
L51 120715 S L47,L50  
L52 8186 S L44 AND (C2H4O OR C3H6O OR C4H8O) NOT L51  
L53 2793 S L44 AND C3H6O AND C2H4O  
L54 438 S L44 AND C3H6O AND C4H8O  
L55 835 S L44 AND C2H4O AND C4H8O  
L56 2987 S L53-L55 NOT L52  
L57 120715 S L56,L51

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L58          STR
L59          50 S L58 SAM SUB=L57
L60          93973 S L58 FUL SUB=L57
L61          STR L45
L62          50 S L61 CSS SAM SUB=L60
L63          22247 S L60 AND (C2H4O OR C3H6O OR C4H8O)
L64          STR L42
L65          50 S L64 CSS SAM SUB=L60
L66          STR L61
L67          50 S L66 CSS SAM SUB=L60
L68          STR L66
L69          50 S L68 CSS SAM SUB=L60
L70          QUE L68
              SET COST OFF
L71          STR L68
L72          50 S L71 SAM SUB=L60
L73          STR L58
L74          50 S L73 SAM SUB=L60
L75          46979 S L73 FUL SUB=L60
L76          10511 S L63 AND L75
L77          8311 S L76 NOT (S OR P)/ELS
L78          7325 S L77 NOT (CL OR BR OR I OR F)/ELS
L79          387 S L78 AND 2/NC
L80          271 S L79 NOT (C3H4O2 OR C4H6O2)
L81          265 S L80 NOT C8H8
L82          116 S L79 NOT L80
L83          17 S L82 AND NR>=1
L84          99 S L82 NOT L83
L85          15 S L84 AND ("(C2H4O)NC4H4O4" OR "(C2H4O)NC5H6O4" OR "(C3H6O)N(C3
L86          84 S L84 NOT L85
L87          36 S L86 AND C4H6O2
L88          48 S L86 AND C3H4O2
L89          1 S L88 NOT 79-10-7/CRN
L90          47 S L88 NOT L89
L91          35 S L87 NOT C2H6O2
L92          1137 S L78 AND 3/NC
L93          198 S L92 AND SALT
L94          82 S L90,L91

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FILE 'HCAPLUS' ENTERED AT 13:46:05 ON 16 APR 2008

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L95          486 S L94
L96          1 S L95 AND L1-L13
              SEL RN

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FILE 'REGISTRY' ENTERED AT 13:46:34 ON 16 APR 2008

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L97          6 S E15-E20

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FILE 'HCAPLUS' ENTERED AT 13:47:14 ON 16 APR 2008

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L98          4 S L97
L99          1 S L98 AND L1-L13
L100         1 S L96,L99
L101         81 S L98,L95 AND PY<=2004 NOT P/DT
L102         314 S L98,L95 AND (PD<=20040123 OR PRD<=20040123 OR AD<=20040123) A
L103         395 S L101,L102
L104         0 S L100 AND L103 NOT L40
L105         2 S L103 AND H01M/IPC,IC,ICM,ICS
L106         4 S L103 AND H01B/IPC,IC,ICM,ICS
              E POLYMER ELECTROLYTES/CT
              E E3+ALL
L107         4934 S E9

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L108 5139 S E14  
 L109 9949 S E12  
       E E3+ALL  
 L110 5662 S E5+OLD  
       E E7+ALL  
       E E12+ALL  
       E E6+ALL  
 L111 22673 S E16+OLD  
 L112 16 S L103 AND L107-L111  
       E BATTERY/CT  
 L113 62929 S E4+OLD,NT OR E5+OLD,NT OR E6+OLD,NT OR E7+OLD,NT  
       E E8+ALL  
 L114 10110 S E2+OLD,NT OR E3+OLD,NT OR E4+OLD,NT  
       E BATTERIES/CT  
       E E3+ALL  
 L115 138079 S E1 OR E2+OLD,NT OR E3+OLD,NT OR E4+OLD,NT OR E5+OLD,NT  
 L116 2 S L103 AND L113-L115  
 L117 20 S L105,L106,L112,L116  
 L118 27 S L103 AND ?ELECTROLYT?  
 L119 18 S L117 AND L118  
 L120 2 S L117 NOT L119  
 L121 9 S L118 NOT L119  
 L122 5 S L119 AND (BATTERY OR ?CATHOD? OR ANOD? OR ?ELECTRODE? OR (FUE  
 L123 13 S L119 NOT L122  
 L124 4 S L122 NOT L40  
 L125 1 S L122 NOT L124  
 L126 12 S L103 AND ELECTR?/SC,SX  
 L127 8 S L126 NOT L122

FILE 'REGISTRY' ENTERED AT 13:58:36 ON 16 APR 2008

FILE 'HCAPLUS' ENTERED AT 13:58:52 ON 16 APR 2008

L128 29204 S L75  
 L129 29199 S L128 NOT L40,L124  
 L130 305 S L129 AND L107-L111  
 L131 124 S L129 AND L113-L115  
 L132 129 S L129 AND H01M/IPC,IC,ICM,ICS  
 L133 61 S L130-L132 AND PY<=2004 NOT P/DT  
 L134 251 S L130-L132 AND (PD<=20040123 OR PRD<=20040123 OR AD<=20040123)  
 L135 312 S L133,L134  
       SEL HIT RN

FILE 'REGISTRY' ENTERED AT 14:05:03 ON 16 APR 2008

L136 486 S E1-E486  
 L137 45 S L136 AND 2/NC  
 L138 34 S L137 NOT L94  
 L139 4 S L138 AND ("(C3H4O2.(C2H4O)NC5H6O4)X" OR C14H22O7 OR C16H26O7  
 L140 139 S L136 AND 3/NC  
 L141 88 S L140 NOT SALT  
 L142 39 S L141 AND (C2H4O OR C3H6O OR C4H8O)  
 L143 12 S L142 AND N/ELS  
 L144 27 S L142 NOT L143  
 L145 26 S L144 NOT B/ELS  
 L146 25 S L145 NOT (CL OR F OR BR OR I)/ELS  
 L147 24 S L146 NOT C14H22O4  
 L148 23 S L147 NOT C10H14O5  
 L149 22 S L148 NOT UNSPECIFIED  
 L150 2 S L149 AND C6/ES  
 L151 1 S L150 AND C8H8  
 L152 1 S L150 NOT L151

L153 21 S L149 NOT L152  
 L154 19 S L153 NOT (676168-27-7 OR 75760-37-1)  
 L155 51 S L140 NOT L141  
 L156 39 S L155 NOT (N OR S OR P OR SI)/ELS  
 L157 24 S L156 AND (C2H4O OR C3H6O OR C4H8O)  
 L158 23 S L157 NOT "(C2H4O)NC19H28O2"  
 L159 21 S L158 NOT "(C2H4O)NC18H26O2" OR "(C2H4O)NC17H24O2")  
 L160 302 S L136 AND NC>=4  
 L161 152 S L160 AND (C2H4O OR C3H6O OR C4H8O)  
 L162 79 S L161 NOT (N OR S OR P OR SI)/ELS  
 L163 33 S L162 AND C6/ES  
 L164 3 S L163 AND (C4H6 OR (C8H8 AND NA))  
 L165 46 S L162 NOT L163  
 L166 39 S L165 NOT UNSPECIFIED  
 SEL RN 15-27 29 30 33-39  
 L167 22 S E487-E508  
 L168 69 S L139,L154,L159,L164,L167

FILE 'HCAPLUS' ENTERED AT 14:25:22 ON 16 APR 2008

L169 478 S L168  
 L170 50 S L169 AND PY<=2004 NOT P/DT  
 L171 340 S L169 AND (PD<=20040123 OR PRD<=20040123 OR AD<=20040123) AND  
 L172 390 S L170,L171  
 L173 18 S L172 AND H01M/IPC, IC, ICM, ICS  
 L174 42 S L172 AND L107-L111  
 L175 20 S L172 AND L113-L115  
 L176 53 S L173-L175  
 L177 51 S L176 AND ?ELECTROLY?  
 L178 2 S L176 NOT L177  
 L179 1 S L178 NOT SHEETS  
 L180 25 S L177 AND ?POLYMER?(2A)?ELECTROLYT?  
 L181 26 S L179,L180  
 L182 26 S L177 NOT L181  
 SEL AN DN 8 16 24  
 L183 3 S L182 AND E509-E517  
 L184 16 S L181 AND (CAPACITOR OR BATTERY OR FUEL CELL OR ELECTR? CELL)  
 L185 19 S L183,L184  
 L186 10 S L181 NOT L185  
 SEL AN DN 7 8 9 10  
 L187 4 S L186 AND E518-E529  
 L188 23 S L185,L187  
 L189 23 S L188 AND (?BATTER? OR ?CONDUCT? OR ?ELECTROL? OR ?ELECTRI?)

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